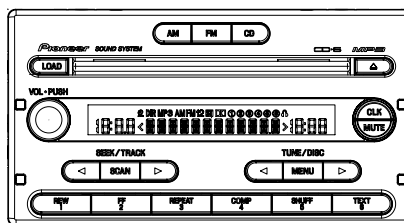


# Service Manual

**FORD**



DEH-MG2037ZF/XU/UC

ORDER NO.  
**CRT3091**

CD/MP3 6 DISC IN-DASH CHANGER WITH FM/AM TUNER

# DEH-MG2037ZF XU/UC

## DEH-MG2137ZF XU/UC

VEHICLE	DESTINATION	PRODUCED AFTER	FORD PART No.	ID No.	PIONEER MODEL No.
Ranger	U.S.A., CANADA	August 2003	4L5T-18C815-	—	DEH-MG2037ZF/XU/UC
Ranger	U.S.A., CANADA	August 2003	4L5T-18C815-	—	DEH-MG2137ZF/XU/UC

● This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-951	CRT2872	G2	CD Mech. Module:Circuit Description, Mech.Description, Disassembly



For details, refer to "Important symbols for good services".

**PIONEER CORPORATION**

4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan

**PIONEER ELECTRONICS (USA) INC.** P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.

**PIONEER EUROPE NV** Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium

**PIONEER ELECTRONICS ASIACENTRE PTE.LTD.** 253 Alexandra Road, #04-01, Singapore 159936

### [ Important symbols for good services ]

In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely. When you find the procedures bearing any of the symbols, be sure to fulfill them:

#### 1. Product safety



You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

#### 2. Adjustments



To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

#### 3. Cleaning



For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

#### 4. Shipping mode and shipping screws



To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

#### 5. Lubricants, glues, and replacement parts



Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount. For replacement parts or tools, the prescribed ones should be used.

### ● CD section precaution !

1. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
2. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY" on page 69.
3. After replacing the pickup unit, be sure to check the grating. (See p.63.)

## SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

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# 1. SPECIFICATIONS

## General

Power source .....	14.4V(10.5V-16.0V allowable) DC
Grounding system .....	Negative type
Backup current .....	3mA or less
Dimensions .....	189(W) x100(H) x188(D)mm
Weight .....	2.4kg

## CD player

System .....	Compact disc audio system
Usable discs .....	Compact disc
Signal format .....	Sampling frequency : 44.1kHz Number of quantization : 16;linear
S/N .....	75dB or more
Distortion .....	0.1% or less
MP3 decoding format .....	MPEG1 and MPEG2 audio layer 3

## FM tuner

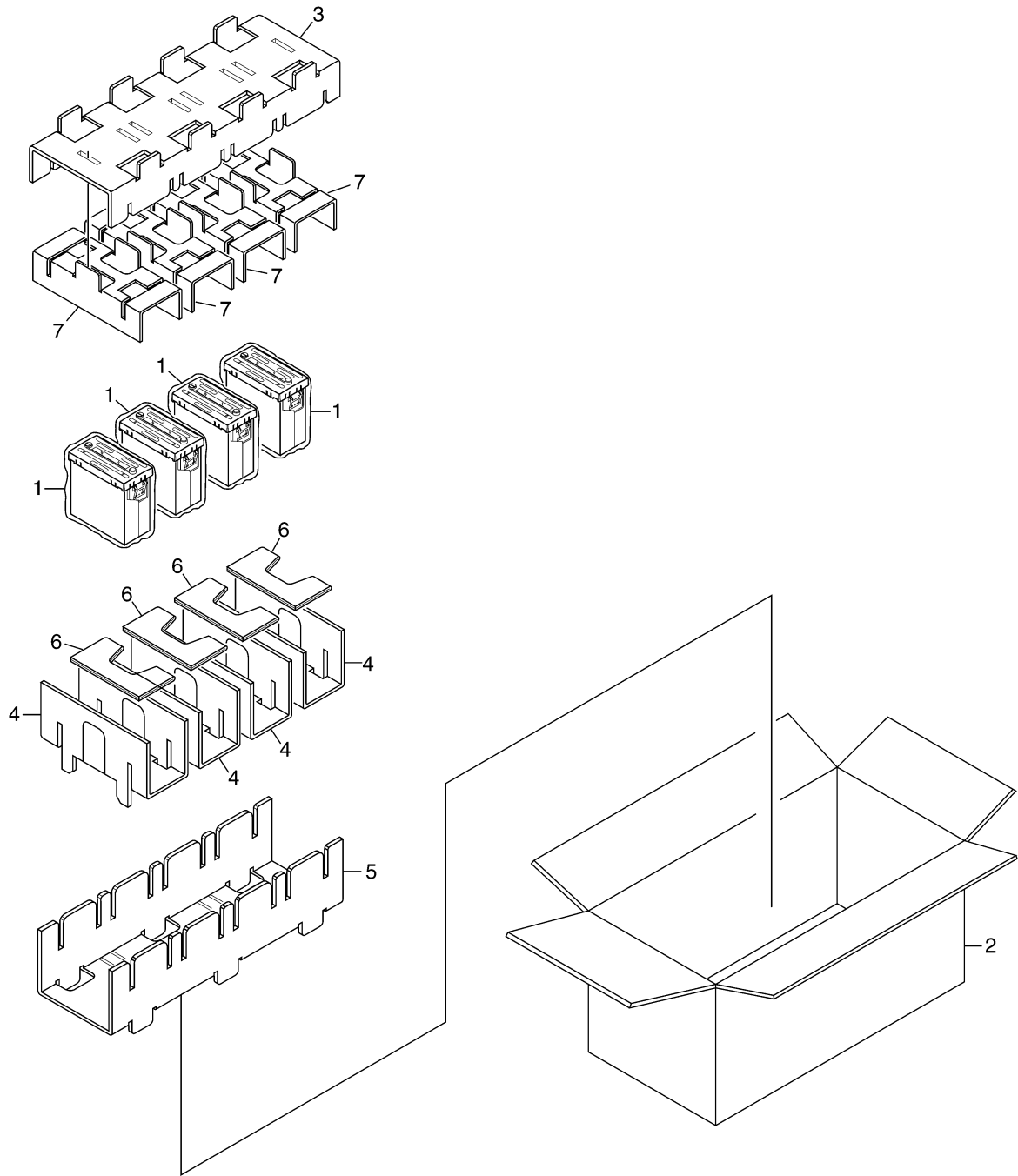
Frequency .....	87.75, 87.9-107.9 MHz
S/N .....	58dB or more
Distortion .....	1.5% or less
IF interference .....	95dB or more
Image interference .....	45dB or more
Stereo Separation .....	25dB or more(400Hz)

## AM tuner

Frequency .....	530-1710 kHz
S/N .....	20dB useable sensibility 33dBμ 6dB
S/N .....	50dB +10dB, -6dB
Distortion .....	1.0% or less
IF interference .....	75dB or more
Image interference .....	60dB or more

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



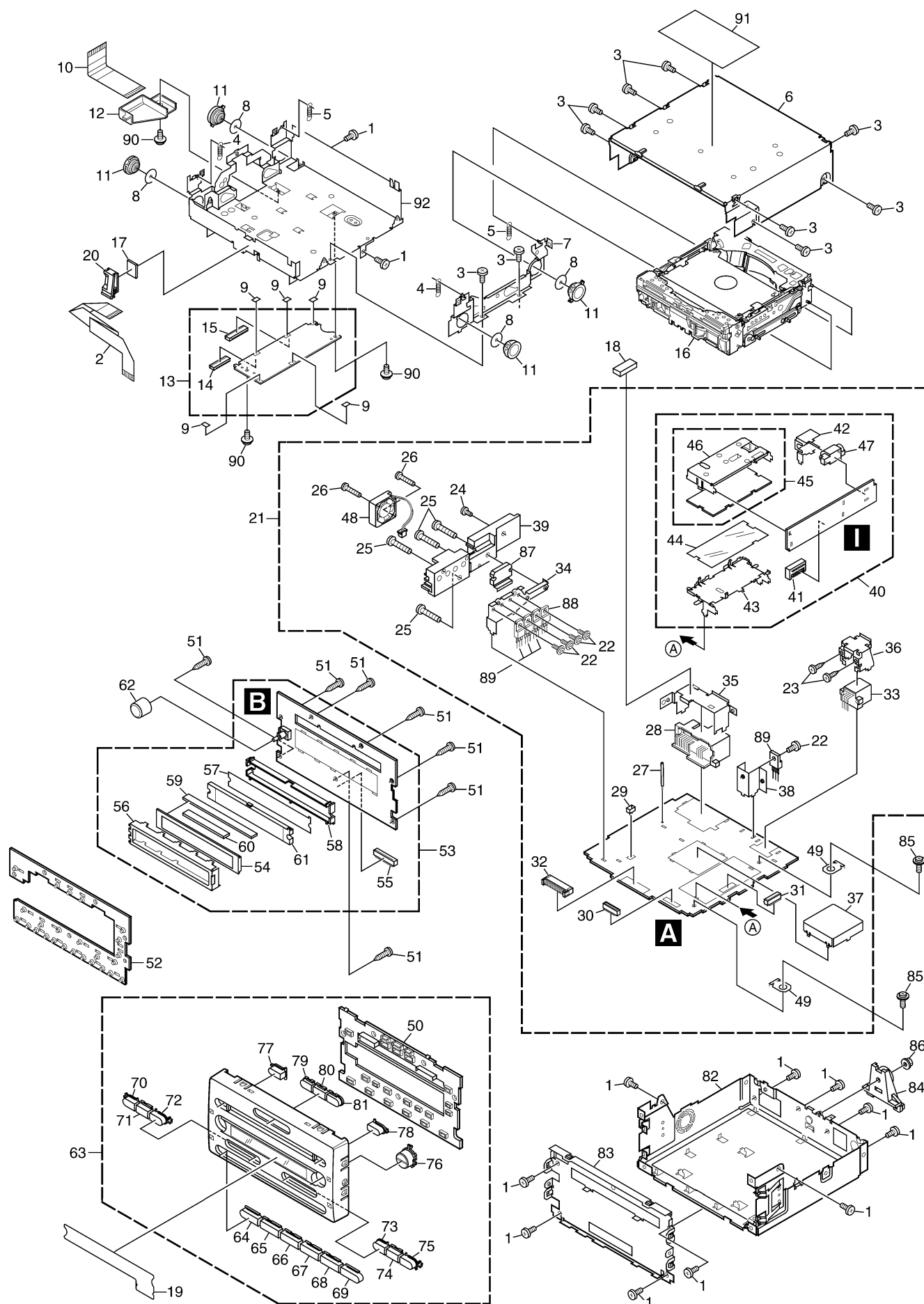
NOTE:

- Parts marked by "\*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ▽ mark on the product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual.  
( In the case of no amount instructions, apply as you think it appropriate.)

● PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
*	1 Polyethylene Bag	CEG1317	3	Protector	CHP2619
2	Contain Box (DEH-MG2037ZF/XU/UC)	CHL4766	4	Protector	CHP2620
	Contain Box (DEH-MG2137ZF/XU/UC)	CHL4767	5	Protector	CHP2621
			6	Protector	CHP2622
			7	Protector	CHP2717

## 2.2 EXTERIOR



**(1) EXTERIOR SECTION PARTS LIST**

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	Screw	BSZ26P060FTC	51	Screw	BPZ26P100FTC	A
2	Connector	CDE6820	52	Rubber	CNV7078	
3	Screw	BSZ26P060FTC	53	Keyboard Unit	CWM8236	
4	Spring(Silver)	CBH2481	54	LCD(LCD904)	CAW1822	
5	Spring(Black)	CBH2482	55	Connector(CN901)	CKS4576	
6	Case	CNB2736	56	Holder	CNC9815	
7	Bracket	CNC9824	57	Sheet	CNM7787	
8	Sheet	CNM5981	58	Housing	CNV7069	
9	Sheet	CNM8258	59	Connector	CNV7599	
10	Flexible Cable	CNP7340	60	Connector	CNV7600	B
11	Damper	CNV6608	61	Lighting Conductor	CNV7936	
12	Holder	CNV7225	62	Knob Unit	CXB8558	
13	Control Unit(G2BM)	CWX2713	63	Grille Unit	See Contrast table(2)	
14	Connector(CN902)	CKS1956	64	Button(1)	CAC7524	
15	Connector(CN101)	CKS4512	65	Button(2)	CAC7530	
16	Service Mechanism Unit(G2BM)	CXX1659	66	Button(3)	CAC7531	
17	Double Side Seal	CNM7891	67	Button(4)	See Contrast table(2)	
18	Cushion	CNM8378	68	Button(5)	CAC7535	
19	Sheet	CNM8581	69	Button(6)	CAC7536	
20	Clamper	CNV7333	70	Button(SEEK DOWN)	CAC7537	C
21	Mother Unit	See Contrast table(2)	71	Button(SCAN)	CAC7538	
22	Screw	ASZ26P080FTC	72	Button(SEEK UP)	CAC7539	
23	Screw	See Contrast table(2)	73	Button(TUNE DOWN)	CAC7540	
24	Screw	BSZ26P060FTC	74	Button(MENU)	CAC7541	
25	Screw	BSZ26P160FTC	75	Button(TUNE UP)	CAC7542	
26	Screw(M2.6x14)	CBA1632	76	Button(CLK/MUTE)	CAC7543	
27	Clamper	CEF1035	77	Button(LOAD)	CAC7544	
28	Plug(CN701)	CKM1372	78	Button(EJECT)	CAC7545	
29	Plug(CN871)	CKS1035	79	Button(AM)	CAC7546	
30	Connector(CN704)	CKS3700	80	Button(FM)	CAC7547	D
31	Connector(CN451)	CKS4574	81	Button(CD)	CAC7548	
32	Connector(CN705)	CKS4575	82	Chassis Unit	See Contrast table(2)	
33	Connector(CN703)	See Contrast table(2)	83	Holder Unit	CXC1377	
34	Holder	CNC9818	84	Rail Guide	HNV6756	
35	Holder	CNC9819	85	Screw	ISS26P055FTC	
36	Holder	See Contrast table(2)	86	Nut	NF50FTC	
37	Shield	CNC9882	87	IC(IC101)	TDA7384	
38	Holder	CNC9906	88	Transistor(Q802)	2SD2375	
39	Heat Sink	CNR1640	89	Transistor(Q809,851,855,863)	2SB1185	
40	Tuner Relay Unit	CWM8263	90	Screw	ISS26P060FTC	E
41	Connector(CN411)	CKS4573	* 91	Label	CRW1451	
42	Holder	CNC9822	92	Chassis Unit	CXB9212	
43	Holder	CNC9823				
44	Insulator	CNM7679				
45	FM/AM Tuner Unit	CWE1561				
46	Holder	CNC8855				
47	Antenna Jack(CN401)	HKX1054				
48	Fan Motor(M871)	CXM1283				
49	Terminal(CN452, 453)	VNF1084				F
* 50	Housing	CNV7075				

A

(2) CONTRAST TABLE

DEH-MG2037ZF/XU/UC and DEH-MG2137ZF/XU/UC are constructed the same except for the following:

Mark No.	Symbol and Description	Part No.	
		DEH-MG2037ZF/XU/UC	DEH-MG2137ZF/XU/UC
21	Mother Unit	CWM8234	CWM8235
23	Screw	BPZ26P080FTC	Not used
33	Connector(CN703)	CKX1067	Not used
36	Holder	CNC9820	Not used
63	Grille Unit	CXC2429	CXC2430
67	Button(4)	CAC7534	CAC7549
82	Chassis Unit	CXB8576	CXB9211

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DEH-MG2037ZF/XU/UC

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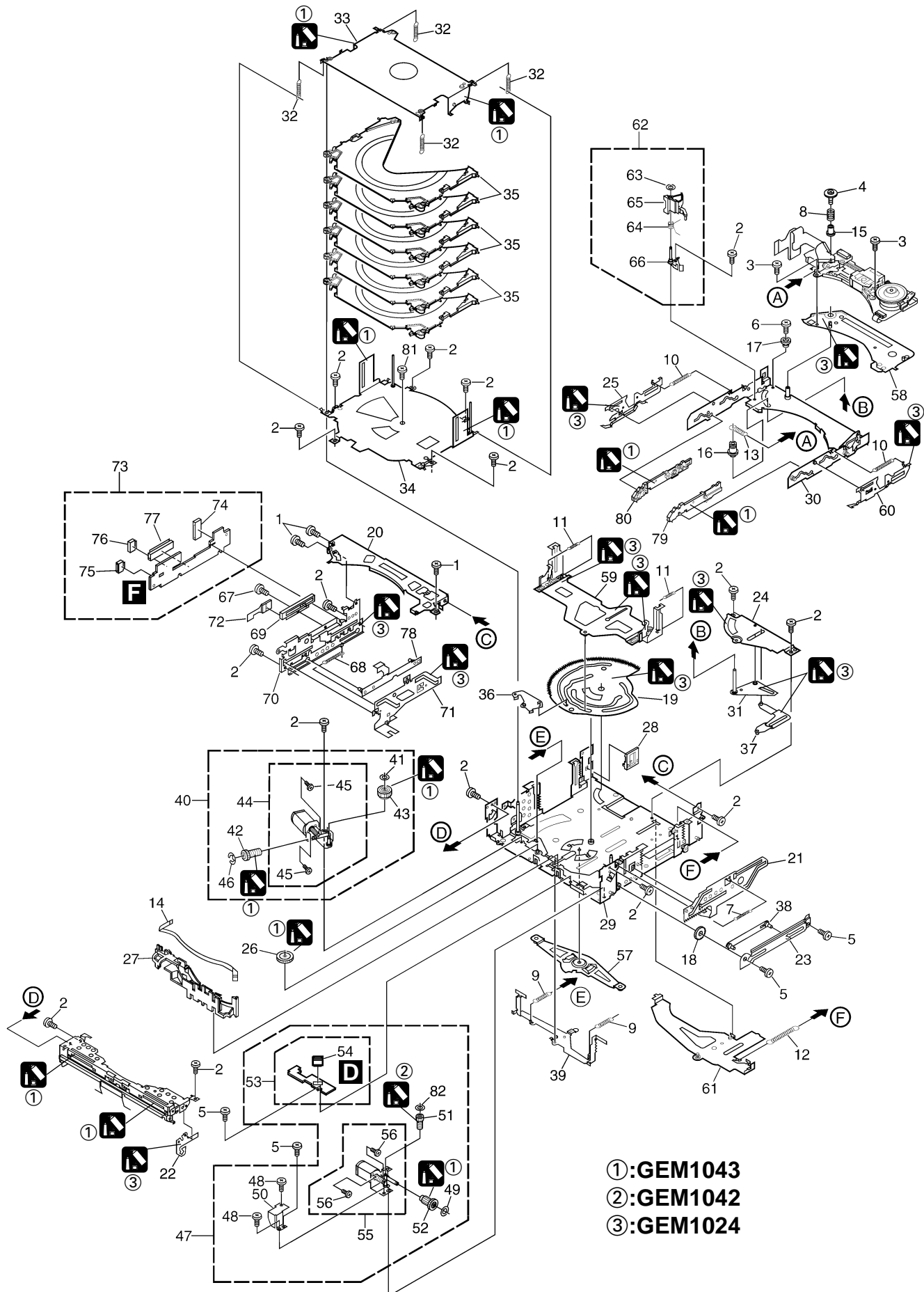
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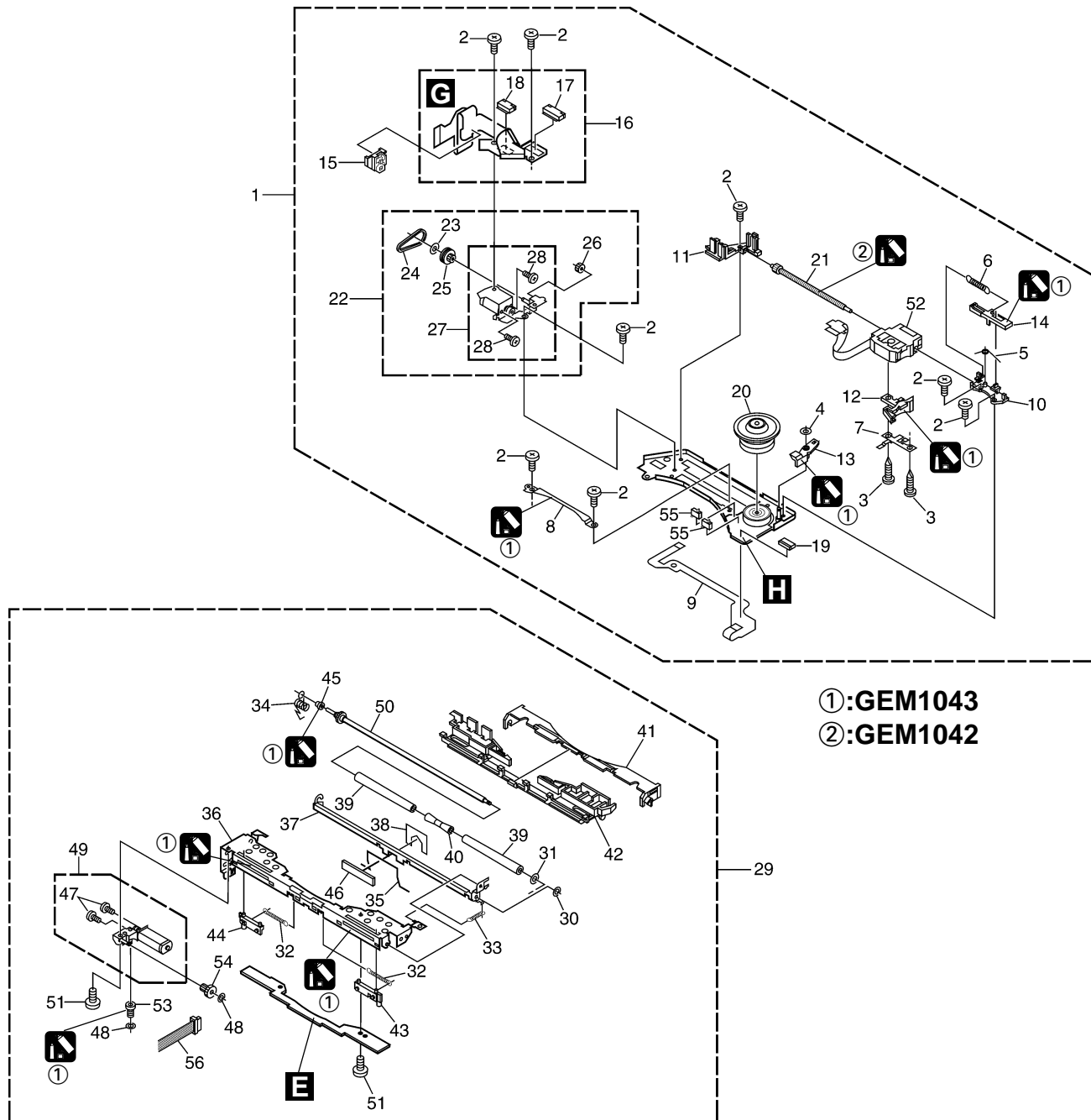
## 2.3 MECHANISM UNIT(G2BM)(SERVICE)(1)



● MECHANISM UNIT(G2BM)(SERVICE)(1) SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	Screw	BMZ20P020FZB	46	Washer	YE20FTC	
2	Screw	BMZ20P025FTC	47	ELV Motor Assy	CXB7523	
3	Screw(M2x2)	CBA1556	48	Screw	BMZ20P025FTC	
4	Screw(M2x2.5)	CBA1626	49	Washer	CBF1064	
5	Screw(M2x2.5)	CBA1609	50	Holder	CND1668	
6	Screw(M2x4.5)	CBA1629	51	Gear	CNV6634	
7	Spring	CBH2460	52	Gear	CNV6635	
8	Spring	CBH2461	53	PCB Unit(LED)	CWX2614	
9	Spring	CBH2484	* 54	Connector(CN31)	CKS4523	B
10	Spring	CBH2694	55	Motor Unit(M2)	CXC1145	
11	Spring	CBH2486	56	Screw	JFZ20P020FTC	
12	Spring	CBH2487	* 57	Arm Unit	CXC1653	
13	Spring	CBH2500	58	Bracket Unit	CXC1654	
14	Connector	CDE6698	* 59	Lever Unit	CXC1658	
15	Collar	CLA4329	* 60	Lever Unit	CXC1659	
16	Collar	CLA4330	* 61	Lever Unit	CXC1661	
17	Collar	CLA4331	62	Arm Assy	CXB8822	
18	Gear	CND1649	63	Washer	CBF1038	C
19	Cam Gear	CND1650	64	Spring	CBH2489	
20	Frame	CND1651	65	Arm	CNV6735	
21	Steer	CND1655	66	Bracket Unit	CXC1652	
22	Arm	CND1657	67	Screw	BMZ20P025FTC	
23	Bracket	CND1658	68	Spring	CBH2459	
24	Bracket	CND1660	69	Volume(VR1)	CCW1023	
* 25	Lever	CNC9953	70	Bracket	CND1652	
26	Gear	CNV6612	71	Steer	CND1656	
27	Holder	CNV6648	72	Flexible PCB	CNP6368	
28	Holder	CNV6738	73	PCB Unit(SIDE)	CWX2613	D
* 29	Chassis Unit	CXC1642	74	Connector(CN12)	CKS3991	
* 30	Frame Unit	CXC1643	* 75	Connector(CN14)	CKS4404	
* 31	Arm Unit	CXC1647	76	Connector(CN13)	CKS4525	
32	Spring	CBH2488	77	Connector(CN11)	CKS4572	
33	Holder Unit	CXC1644	78	Lever Unit	CXC1779	
34	Holder Unit	CXC1646	* 79	Lever Unit	CXB9121	
35	Tray Unit	CXB6930	* 80	Lever Unit	CXB9122	
36	Lever Unit	CXC1648	81	Screw	JFZ20P020FTC	
* 37	Lever Unit	CXC1649	82	Washer	CBF1037	E
38	Lever Unit	CXC1650				
* 39	Lever Unit	CXC1651				
40	Cam Motor Assy	CXB7522				
41	Washer	CBF1064				
42	Gear	CNV6610				
43	Gear	CNV6611				
44	Motor Unit(-A)	CXC1144				
45	Screw	JFZ20P020FTC				

## 2.4 MECHANISM UNIT(G2BM)(SERVICE)(2)





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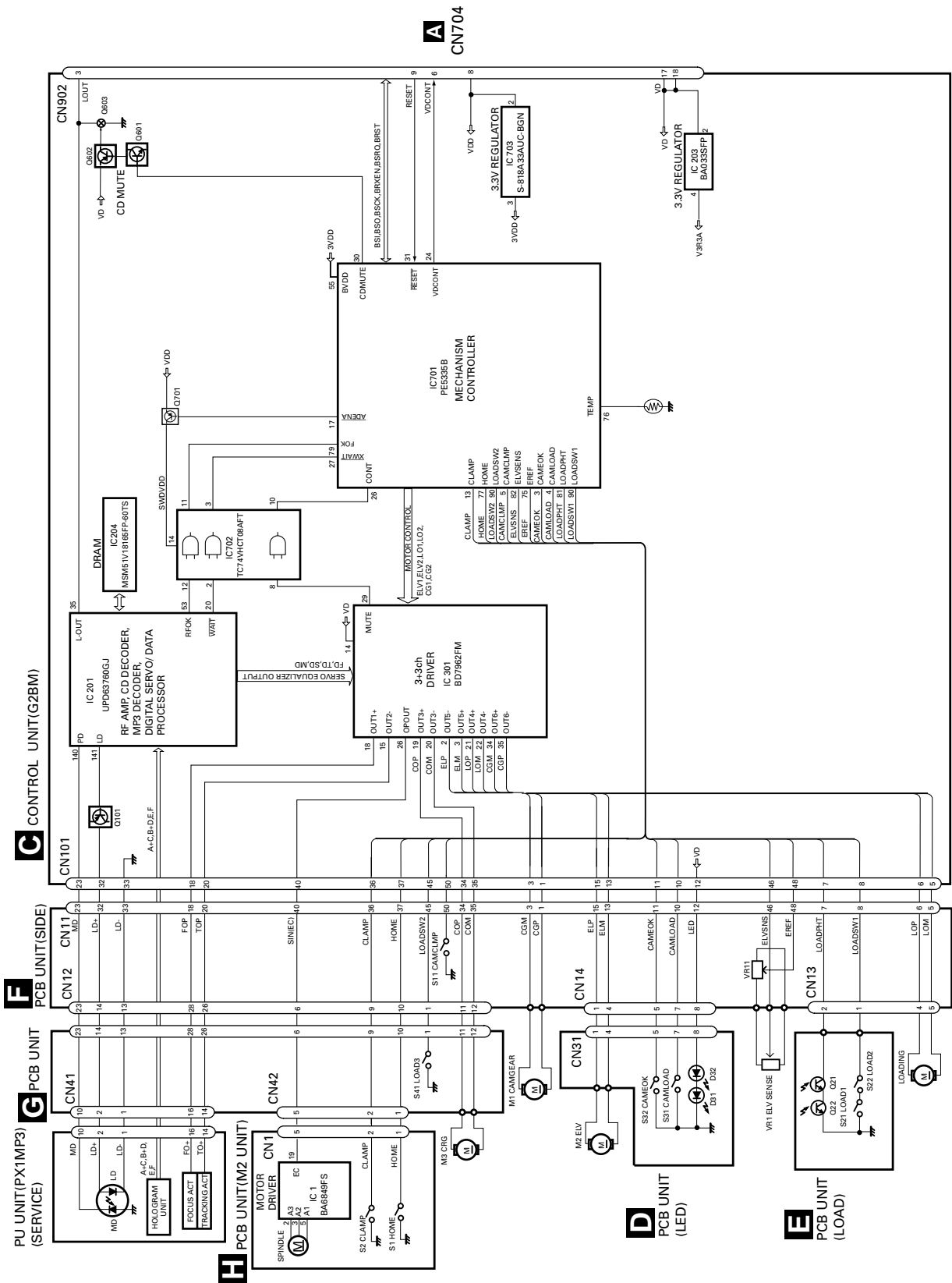
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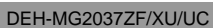
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### 3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

#### 3.1 BLOCK DIAGRAM(1)



## MOTHER UNIT



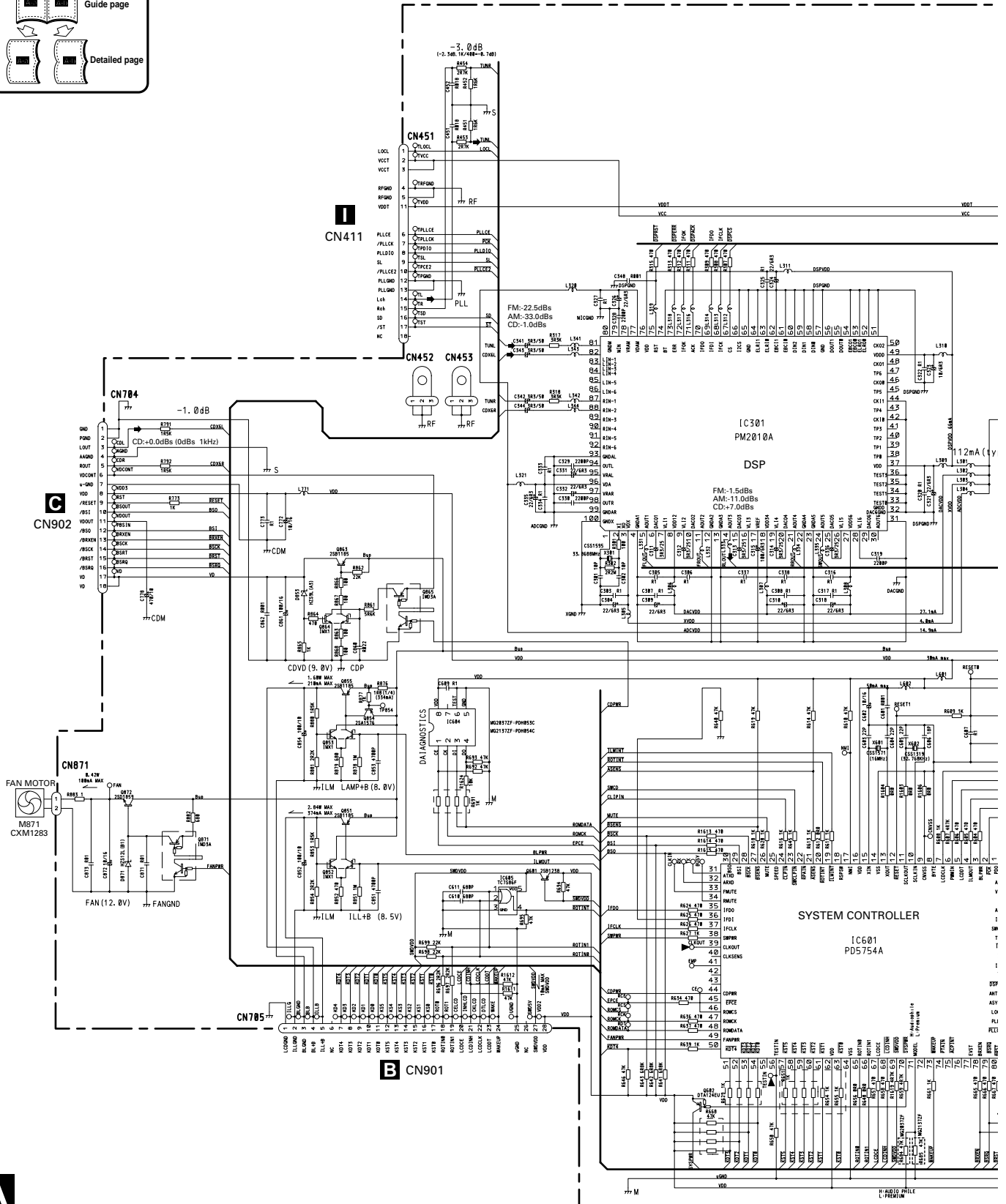
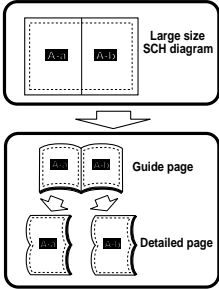




### 3.3 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

A-a

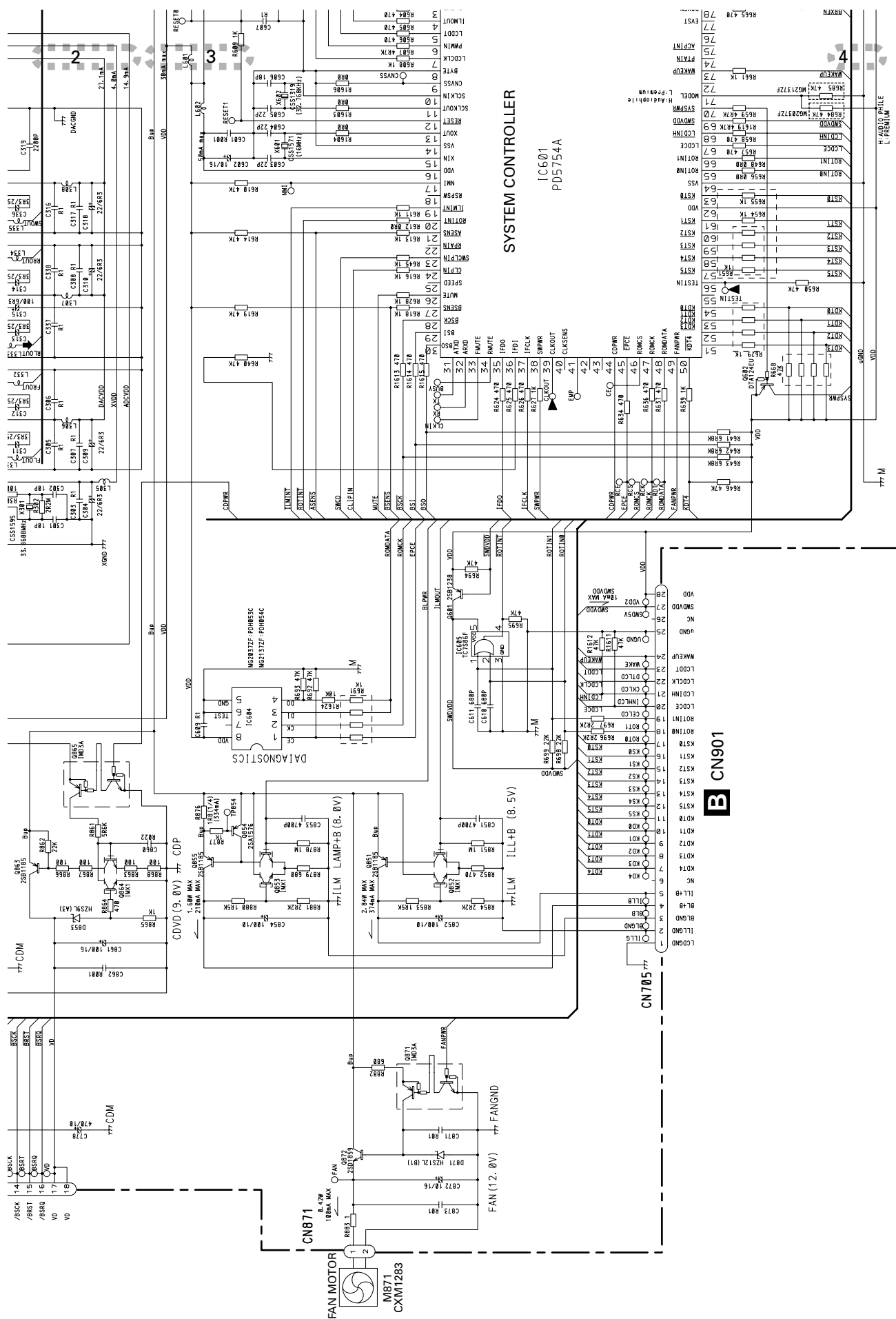


A

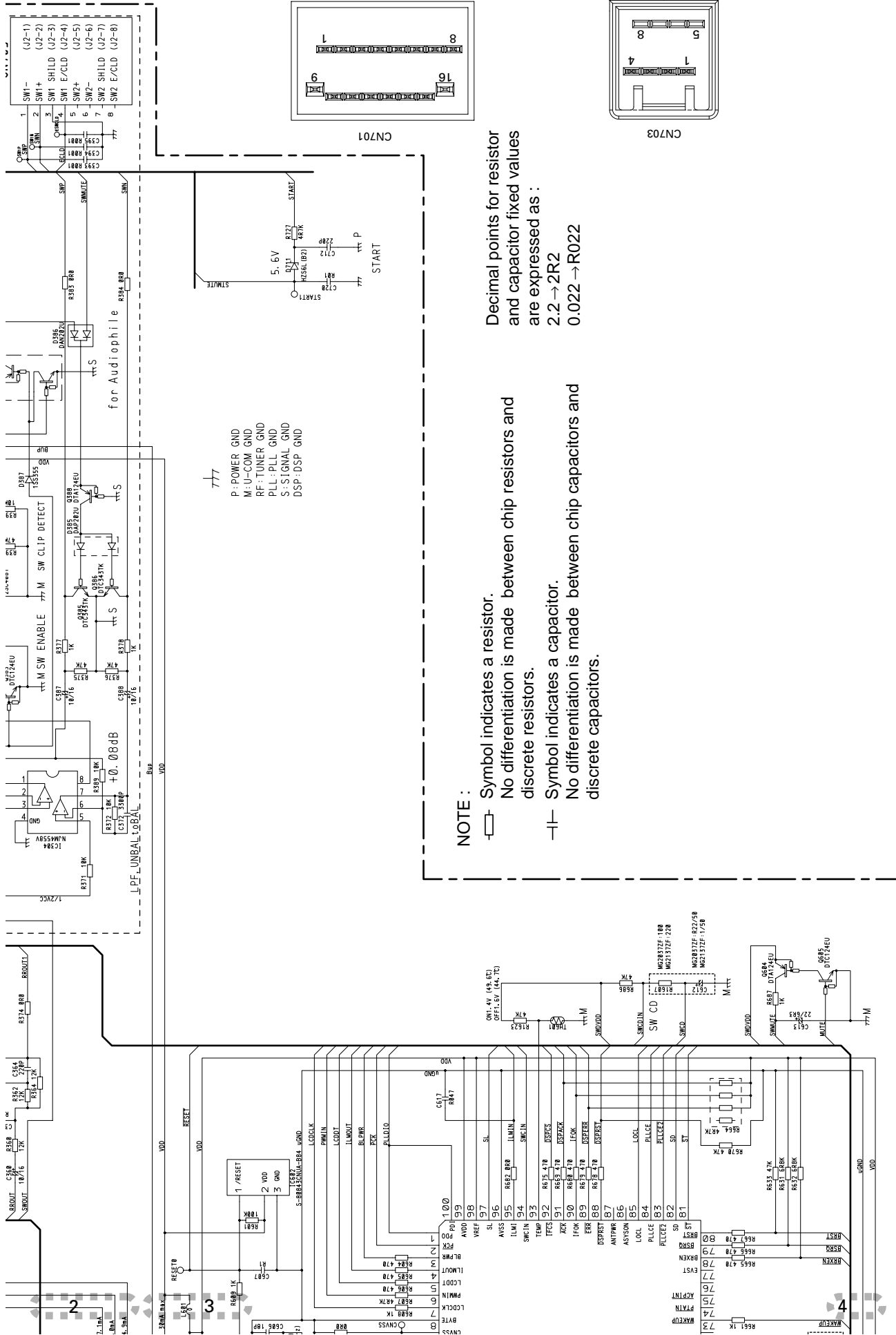
**A** MOTHER UNIT





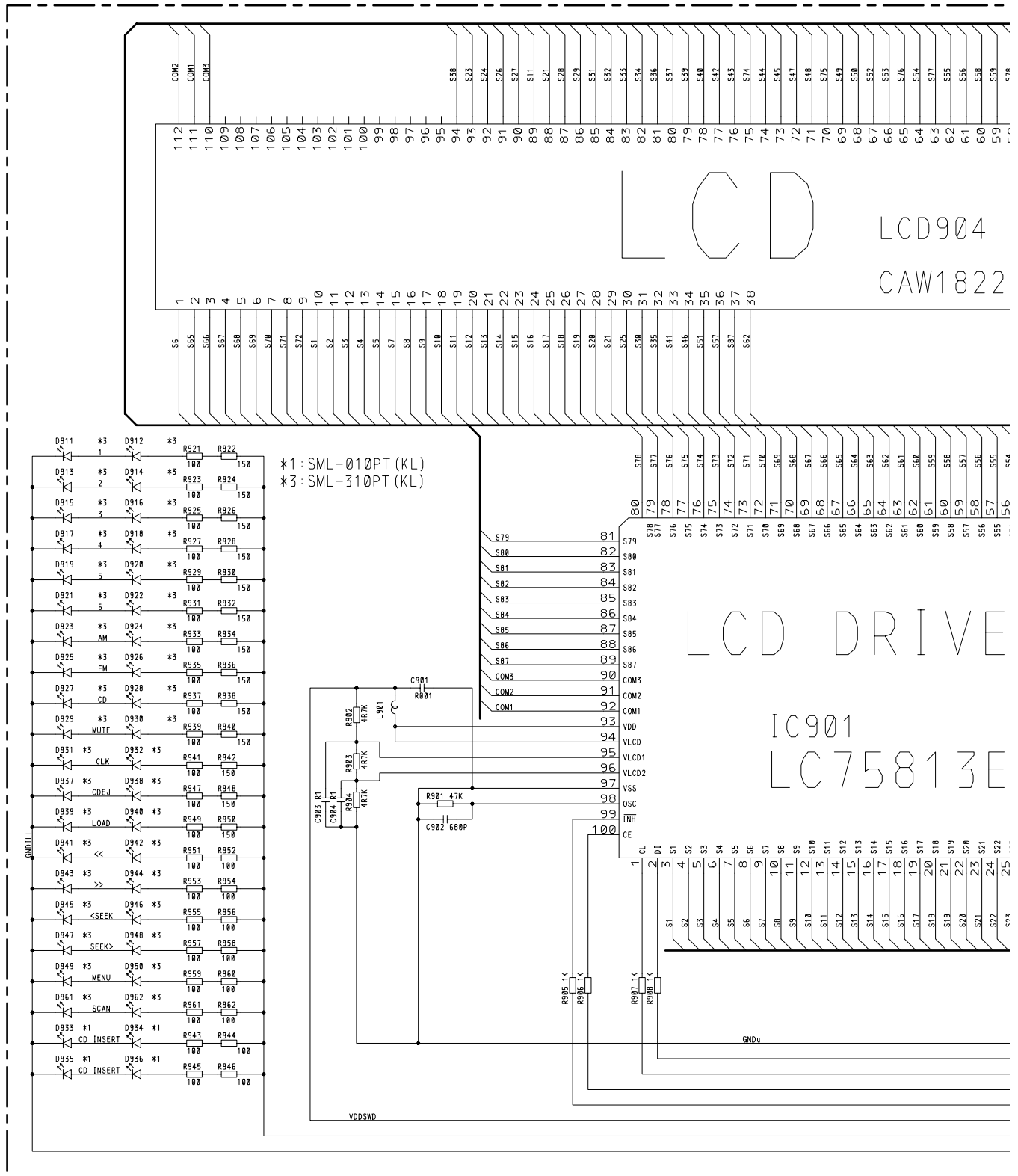






A-b

### 3.4 KEYBOARD UNIT







# 3.5 CD MECHANISM MODULE(GUIDE PAGE)

C-a

A

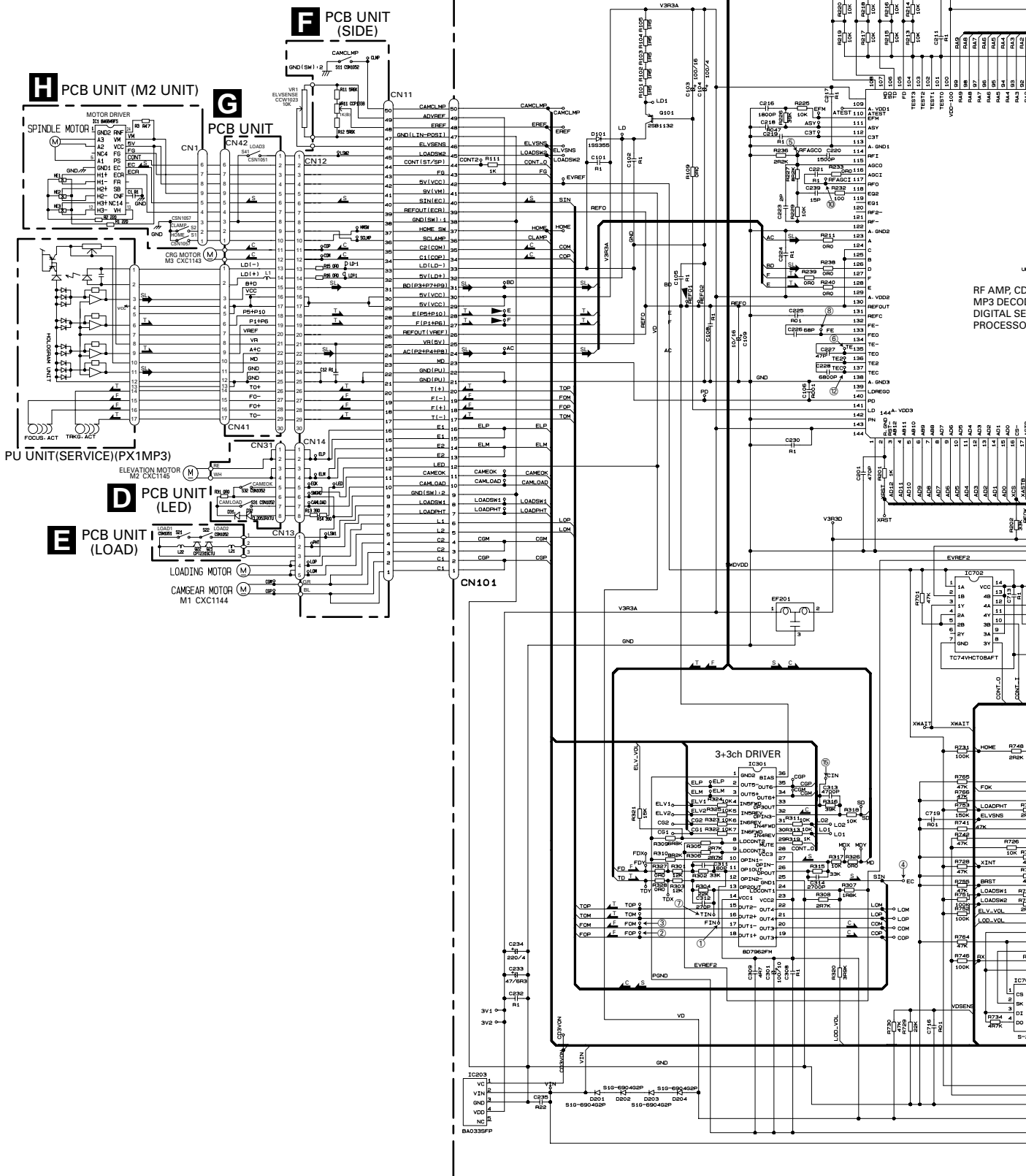
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C D E F G H

**C-b**

A

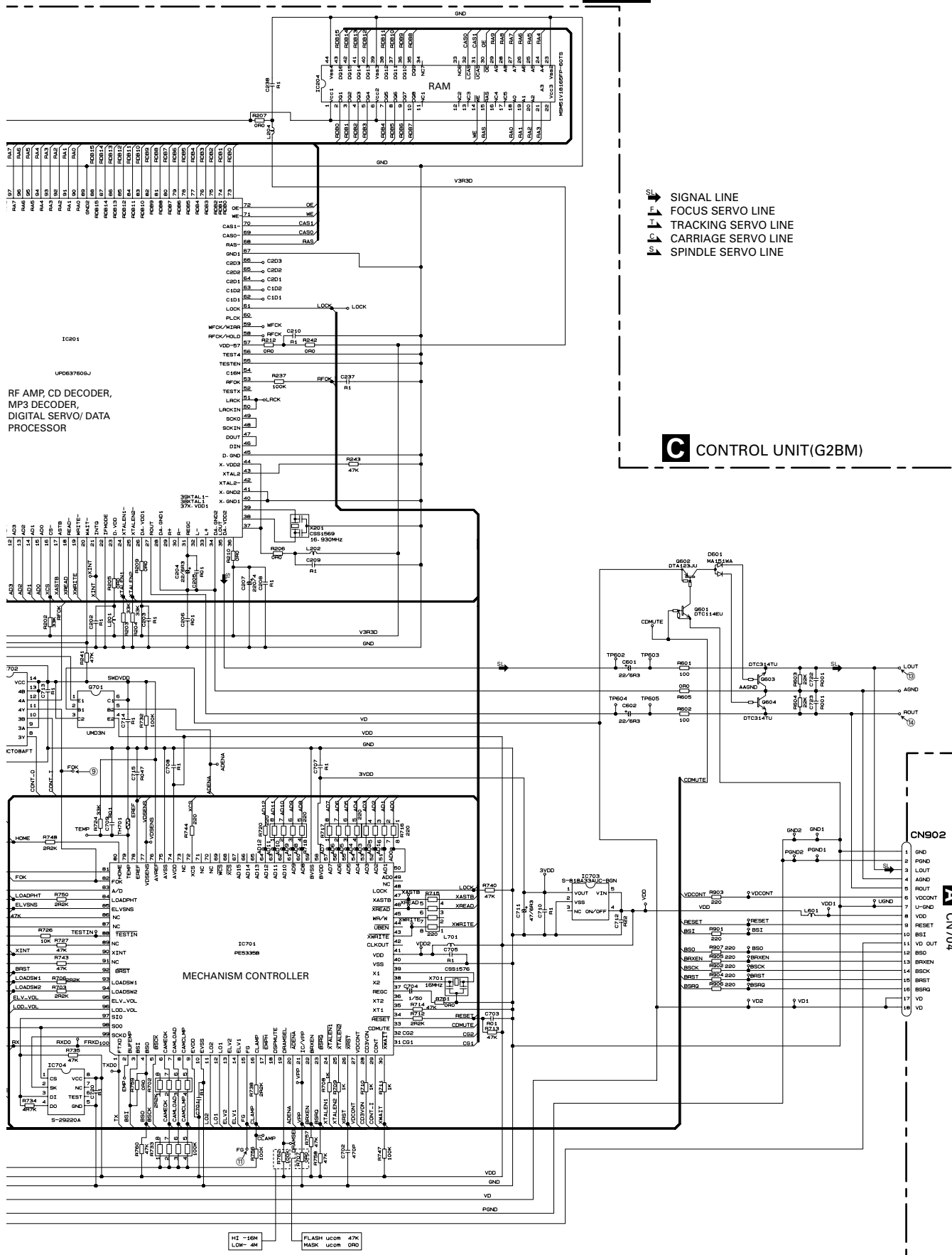
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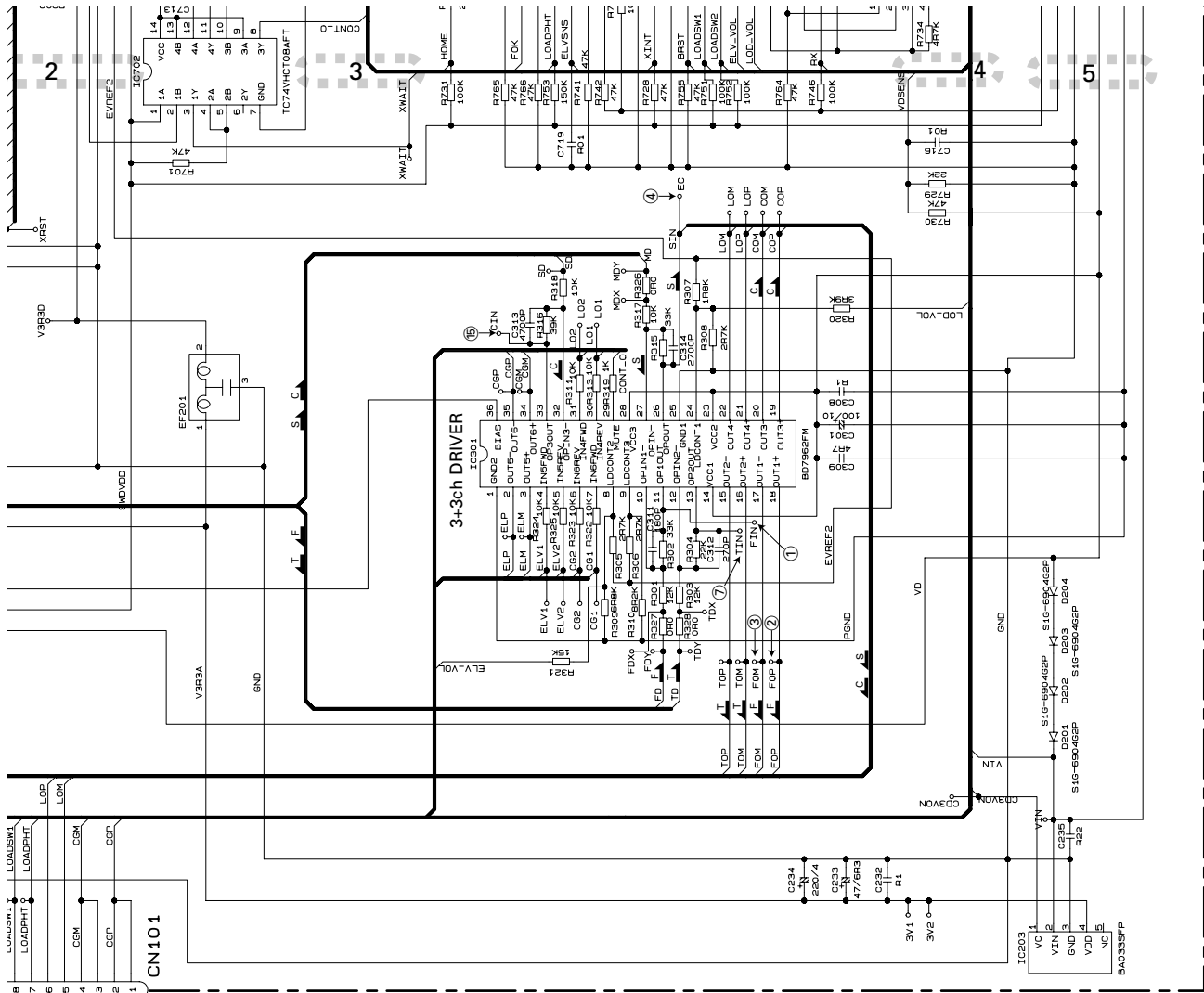
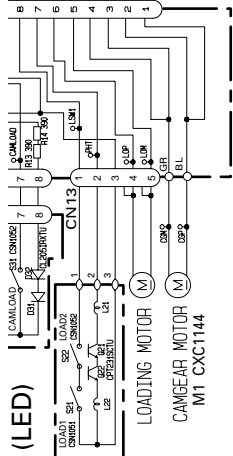
F

**C** CONTROL UNIT(G2BM)

**A** CN704

**C**





C-b

C-a C-b

C-a E

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E

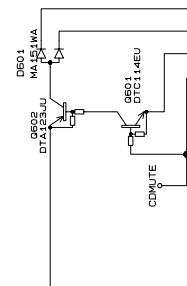
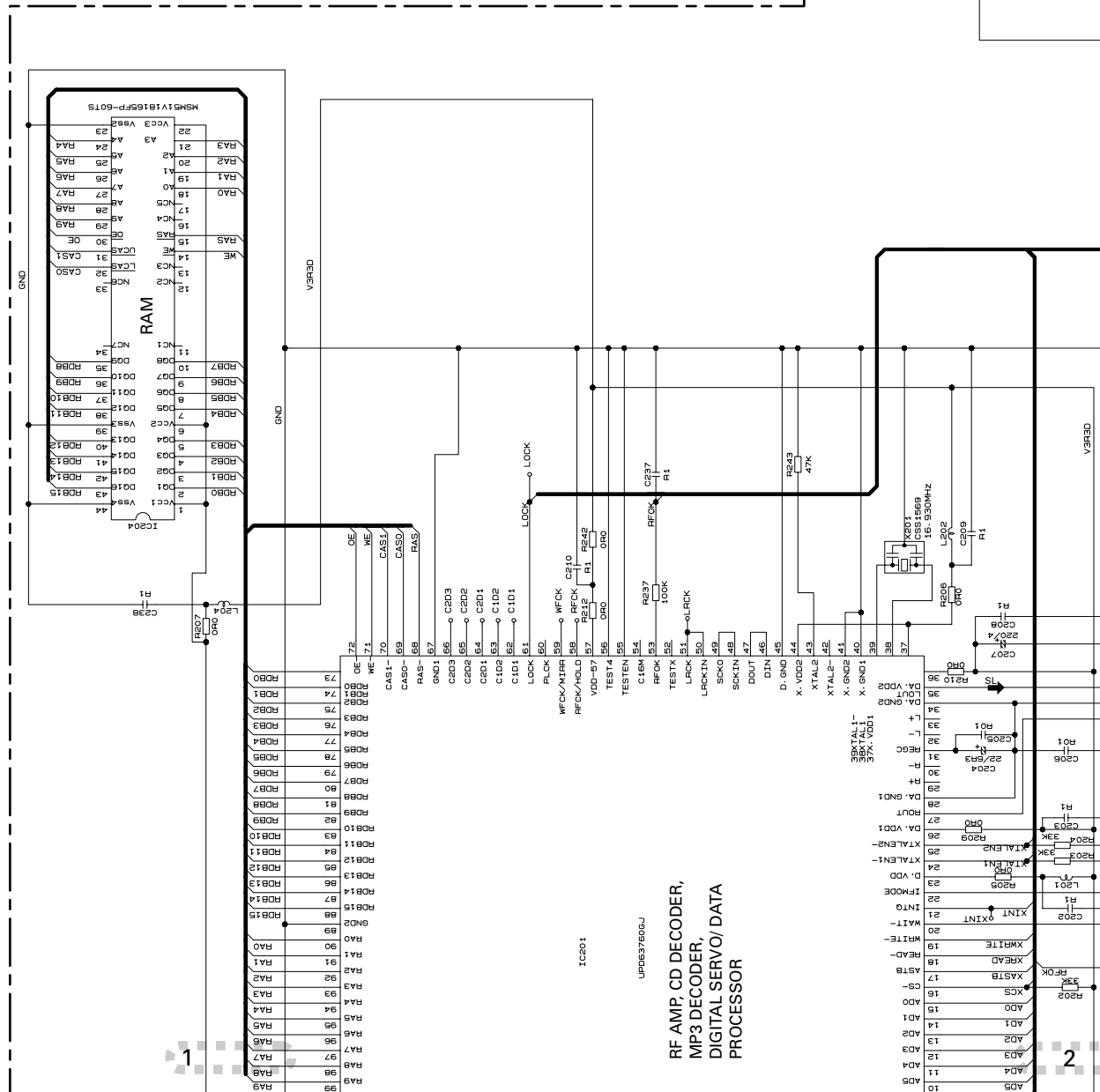
F

C-a C-b

C-b

SIGNAL LINE  
FOCUS SERVO LINE  
TRACKING SERVO LINE  
CARRIAGE SERVO LINE  
SPINDLE SERVO LINE

CONTROL UNIT(G2BM)

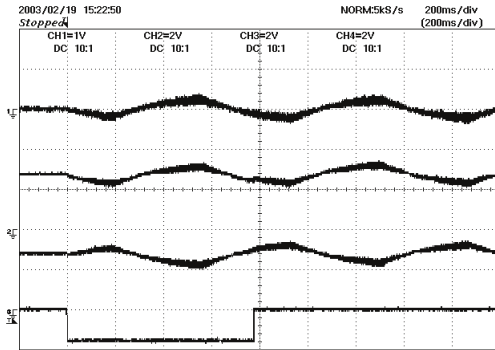




Note: The encircled numbers denote measuring points in the circuit diagram.

A

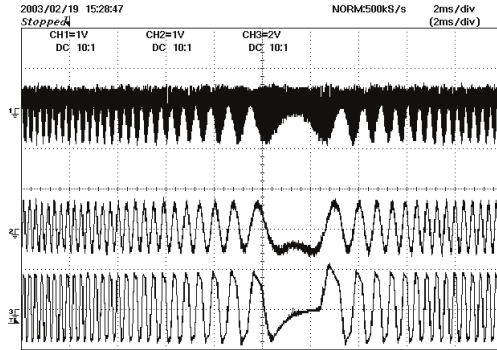
CH1: ① FIN Mode:Test  
CH2: ② FOP  
CH3: ③ FOM  
CH4: ④ EC  
Focus search mode



B

CH1: ⑤ RFAGCO Mode:Test  
CH2: ⑥ TE  
CH3: ⑫ TEC

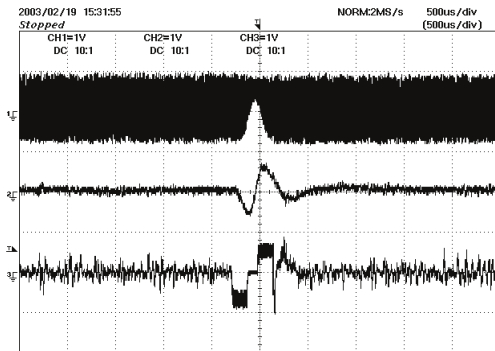
Tracking open



C

CH1: ⑤ RFAGCO Mode:Test  
CH2: ⑥ TE  
CH3: ⑦ TIN

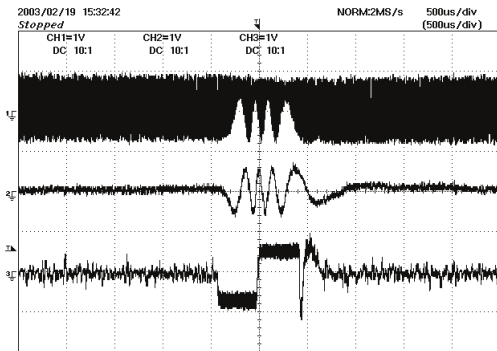
1 Track Jump



D

CH1: ⑤ RFO Mode:Test  
CH2: ⑥ TE  
CH3: ⑦ TIN

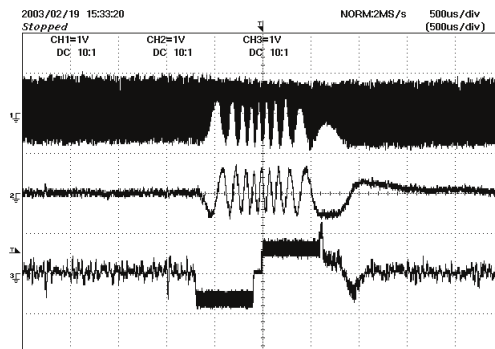
4 Track Jump



E

CH1: ⑤ RFAGCO Mode:Test  
CH2: ⑥ TE  
CH3: ⑦ TIN

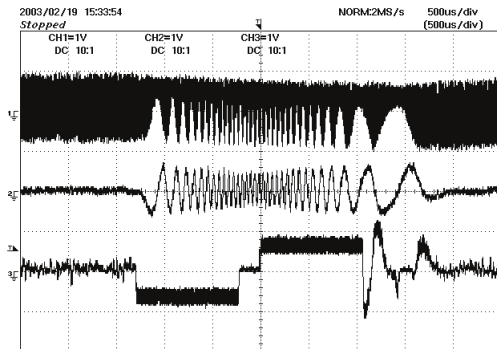
10 Track Jump



F

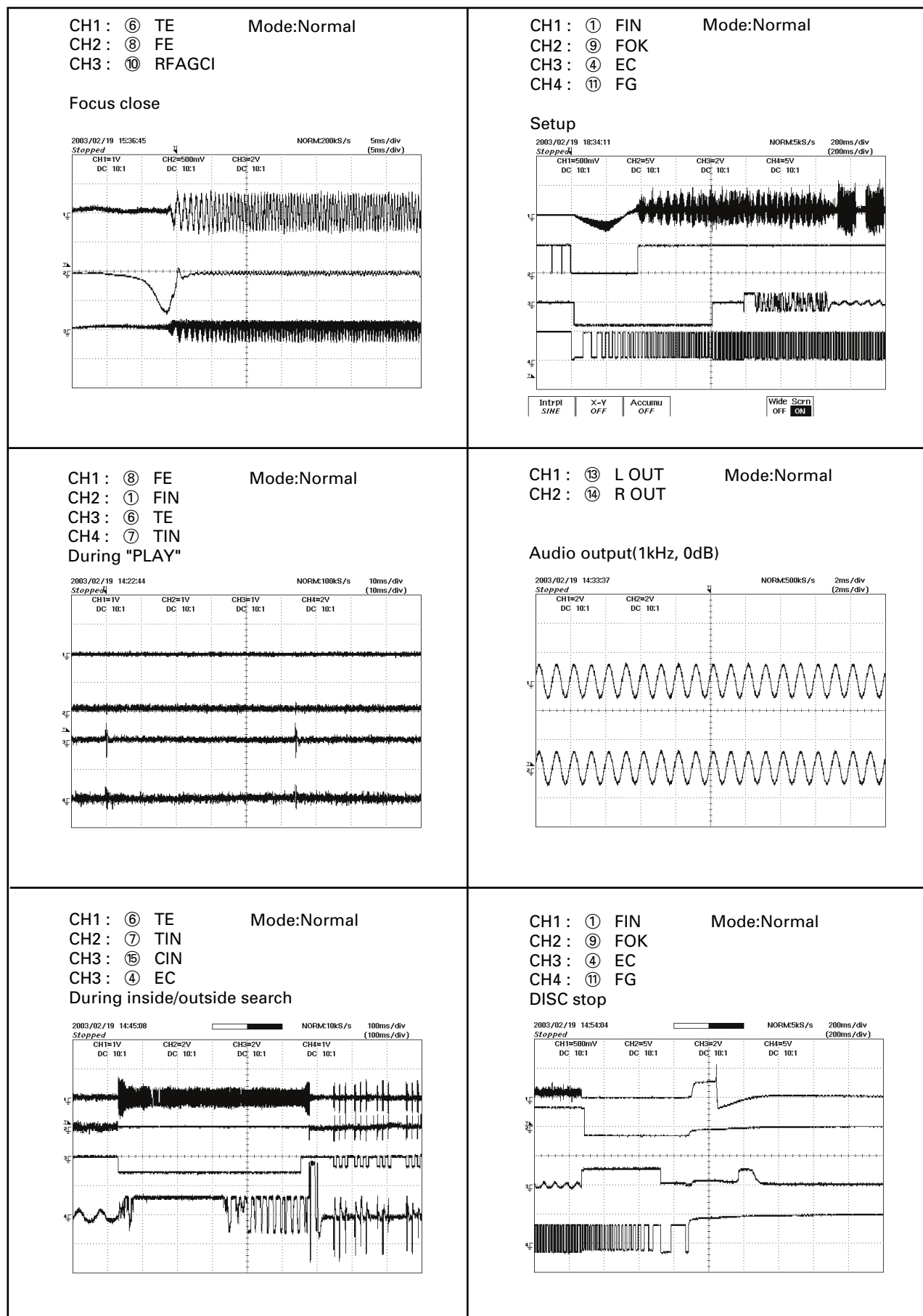
CH1: ⑤ RFAGCO Mode:Test  
CH2: ⑥ TE  
CH3: ⑦ TIN

32 Track Jump





Note: The encircled numbers denote measuring points in the circuit diagram.



## 4

## F





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# 4. PCB CONNECTION DIAGRAM

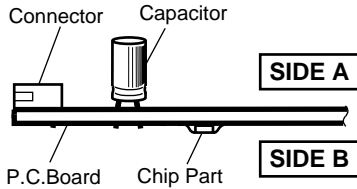
## 4.1 MOTHER UNIT

### NOTE FOR PCB DIAGRAMS

1.The parts mounted on this PCB include all necessary parts for several destination.

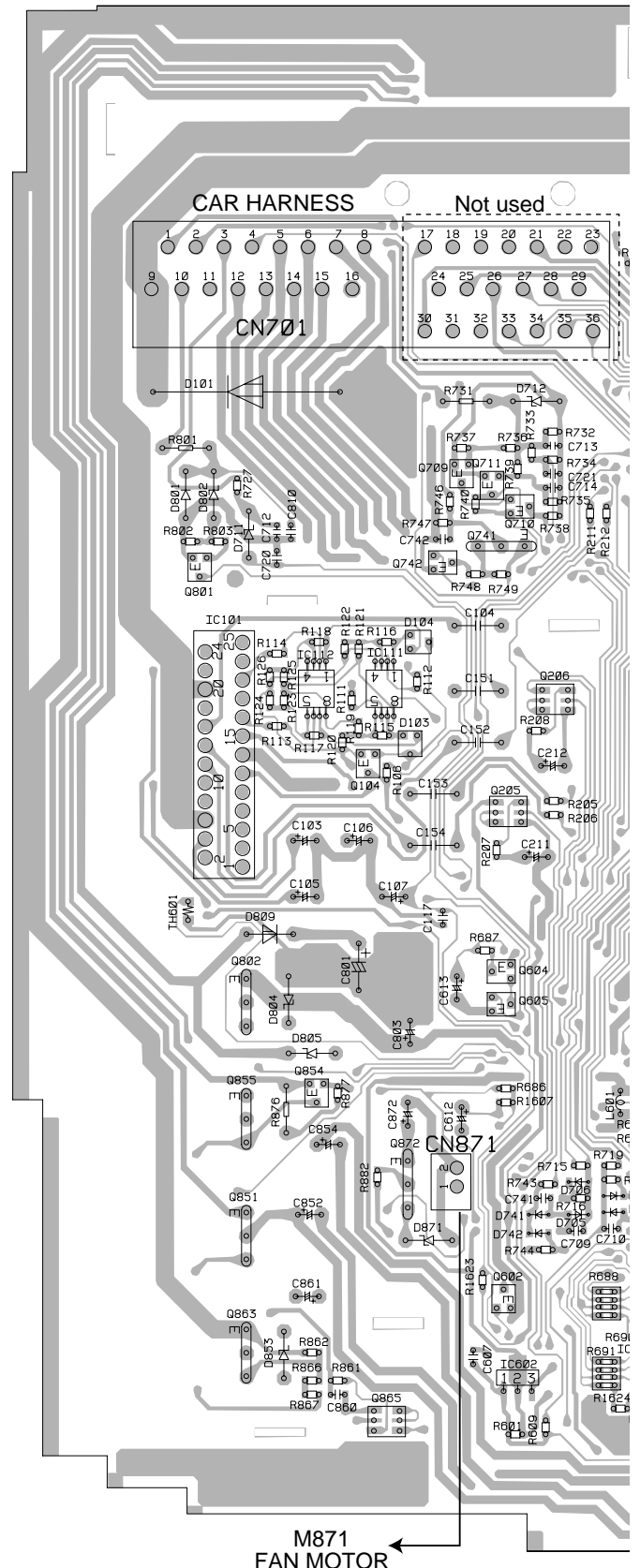
For further information for respective destinations, be sure to check with the schematic diagram.

2.Viewpoint of PCB diagrams

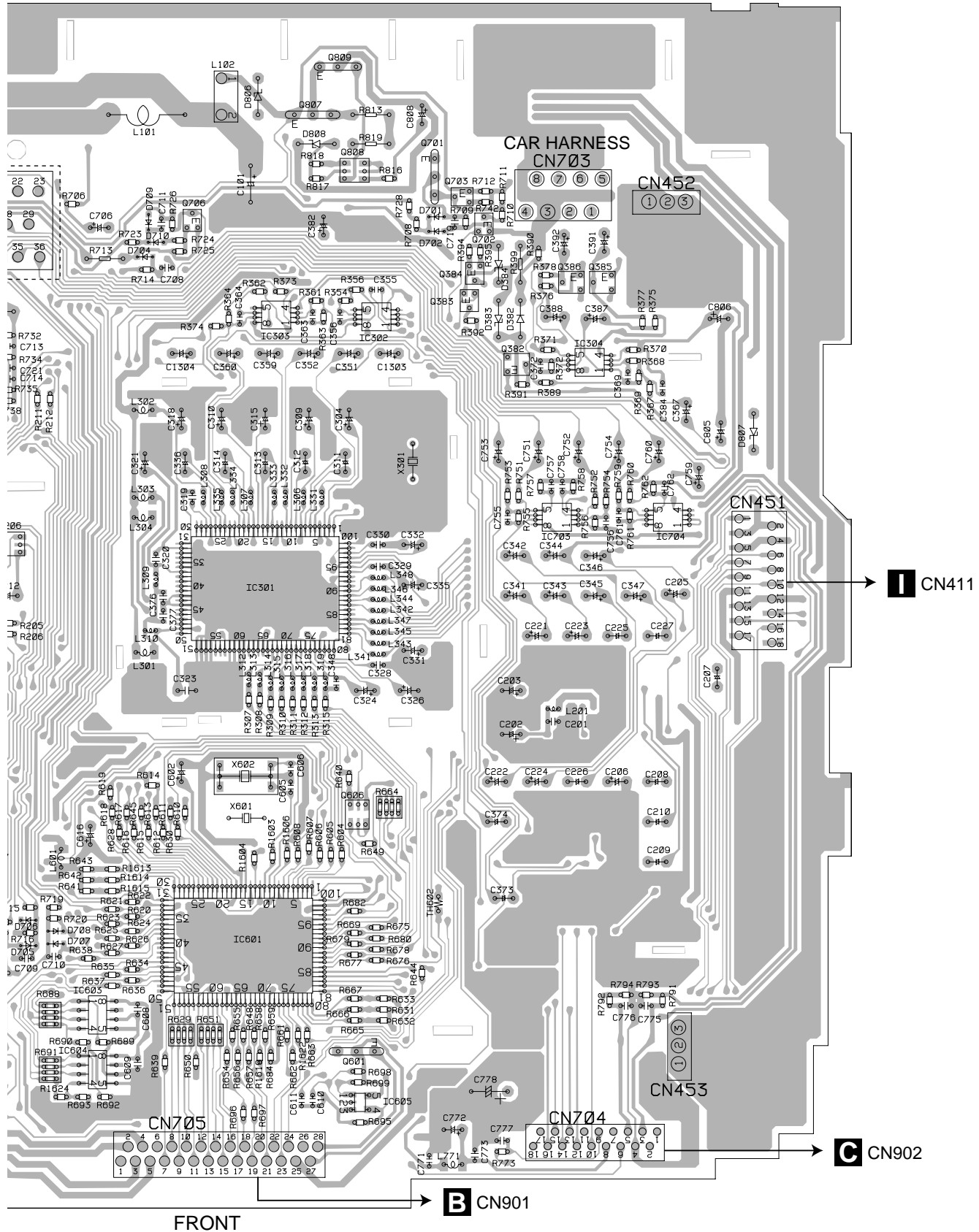


### A MOTHER UNIT

IC 303	IC 302	IC 304	IC, Q
Q709	Q711	Q382	Q809
Q741	Q710	Q384	Q807
Q742	Q801	Q383	Q808
IC101			Q701
IC112	IC111		Q703
IC703	IC704		Q706
IC301			Q702
Q104	Q205		Q386
			Q385
			Q384
			Q383
			Q382
			Q711
			Q710
			Q742
			Q801
			Q802
			Q604
			Q605
			Q606
			Q855
			Q854
			Q872
			Q851
			IC601
			IC603
			Q602
			Q863
IC602	IC604	Q601	
		Q865	
		IC605	



SIDE A



A MOTHER UNIT

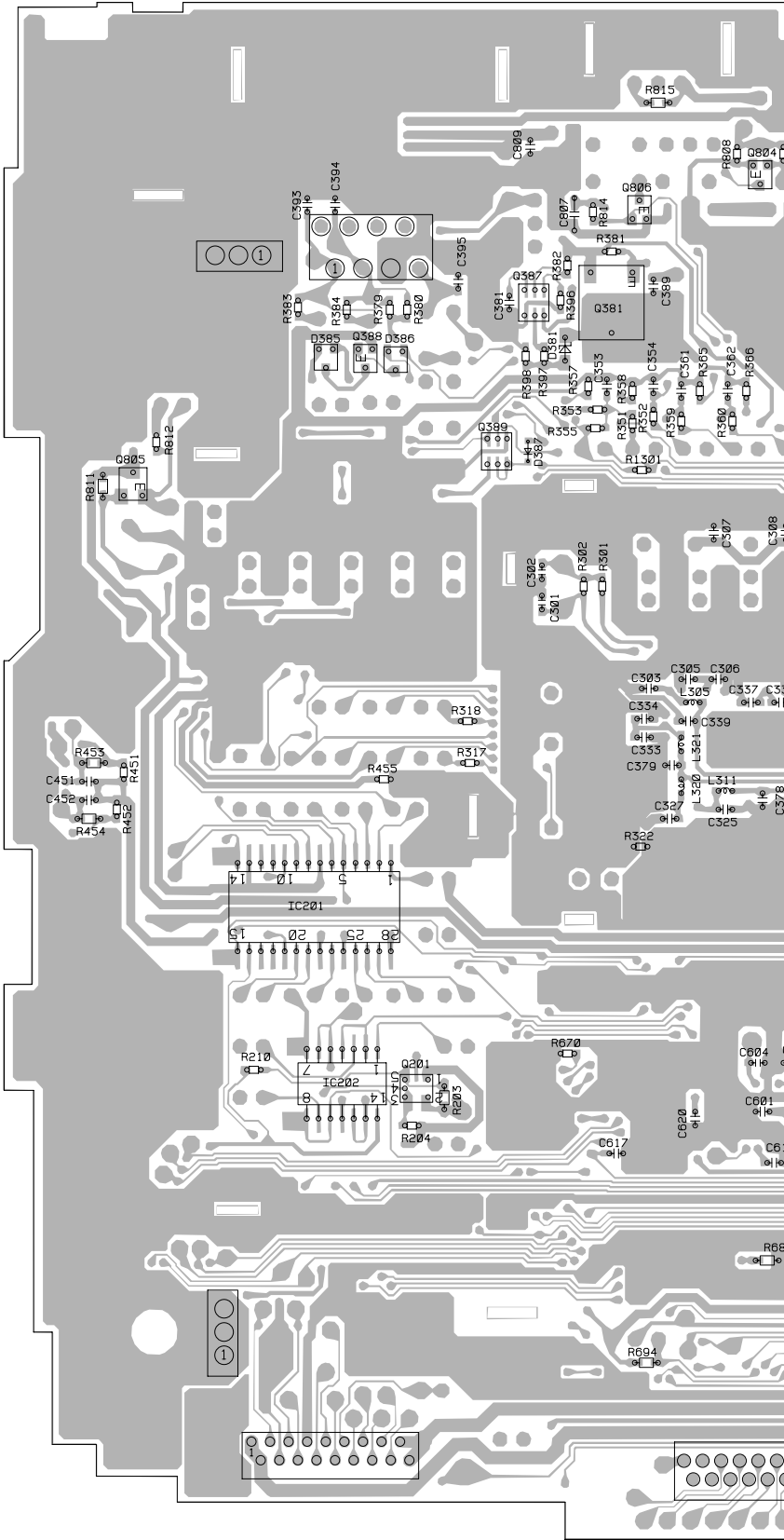
B

C

D

E

F



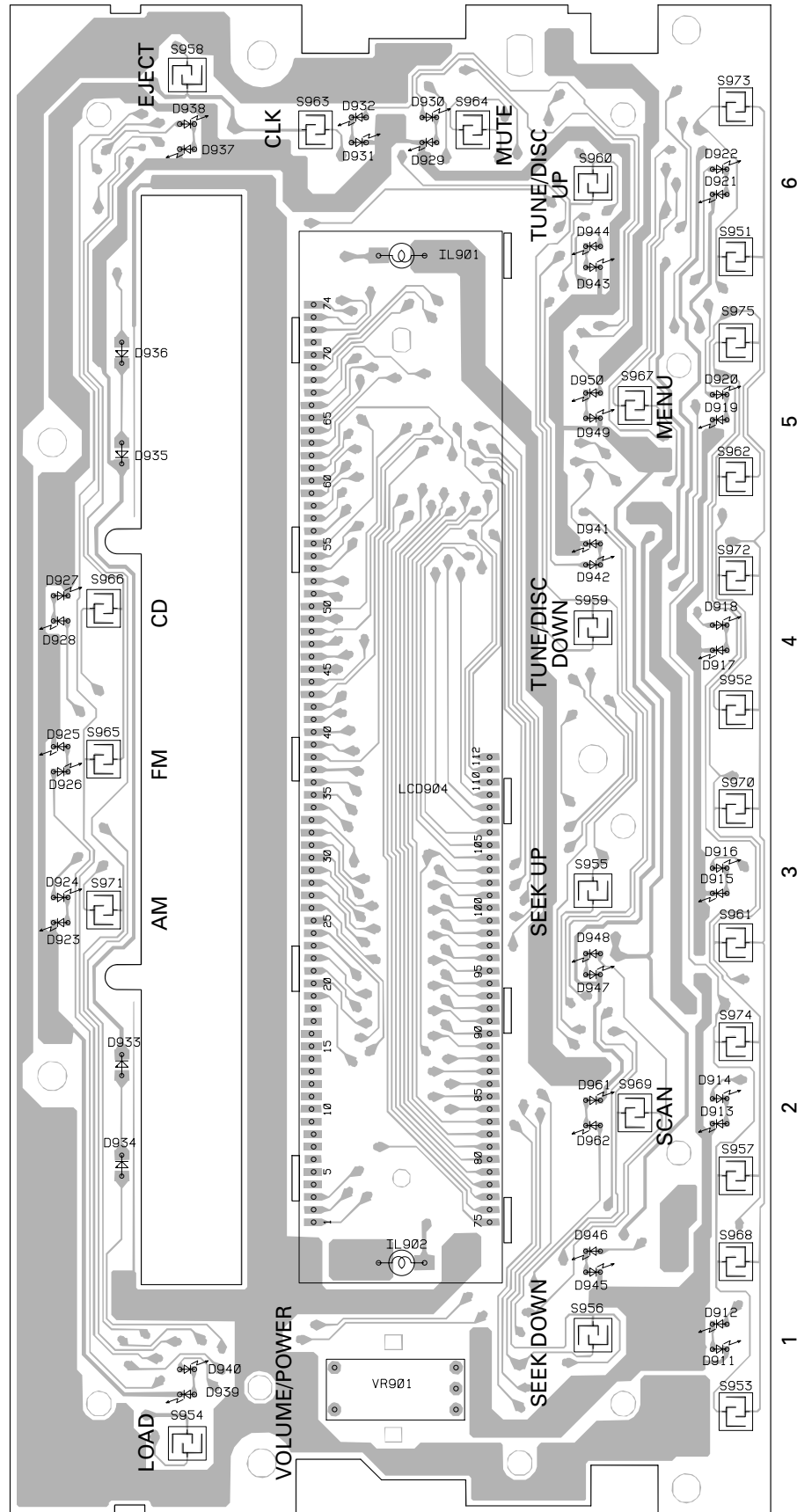
A



## 4.2 KEYBOARD UNIT

### B KEYBOARD UNIT

SIDE A

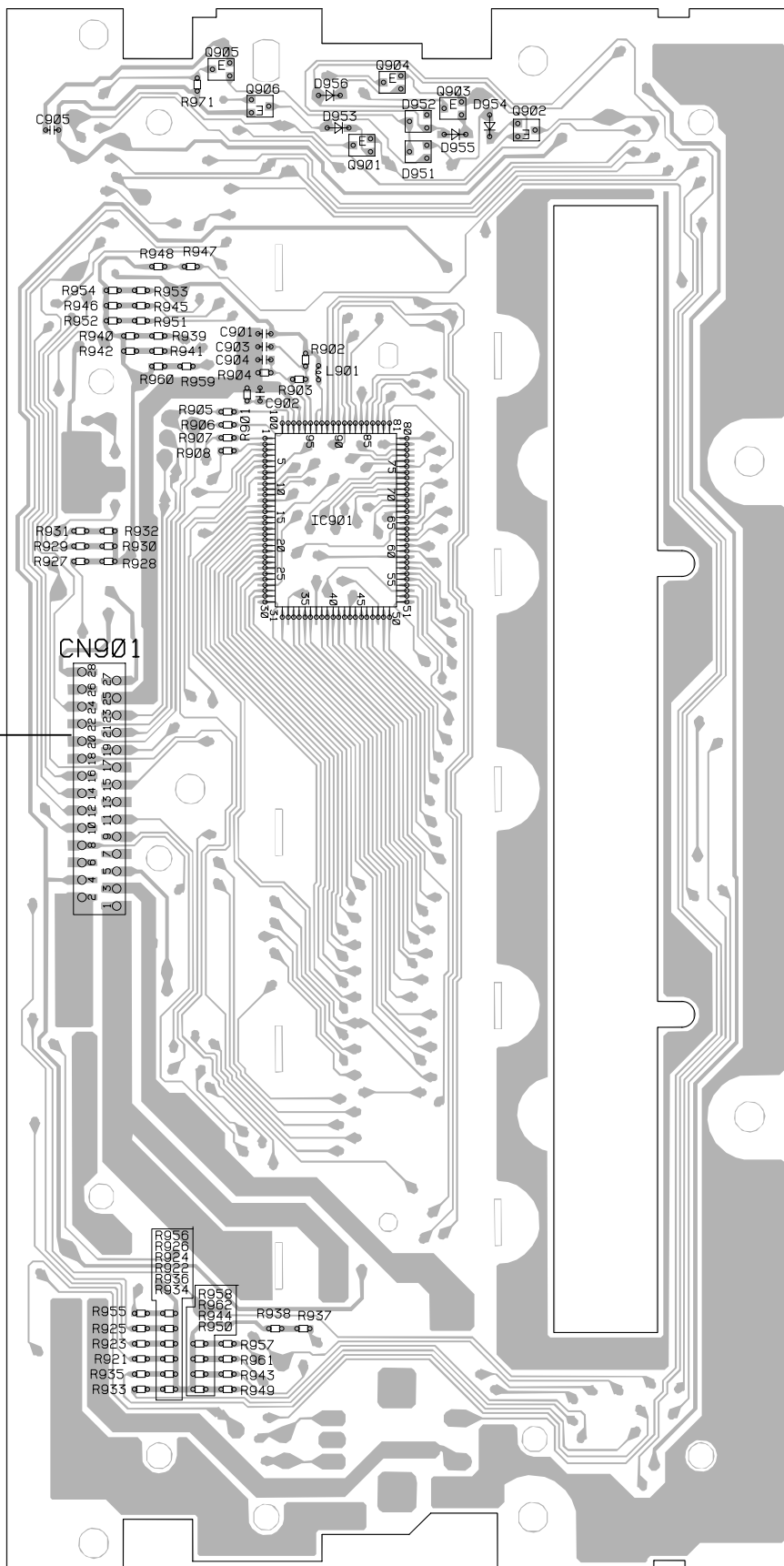




# B KEYBOARD UNIT

SIDE B

A  
CN705



IC, Q

Q905  
Q904  
Q906 Q903  
Q902

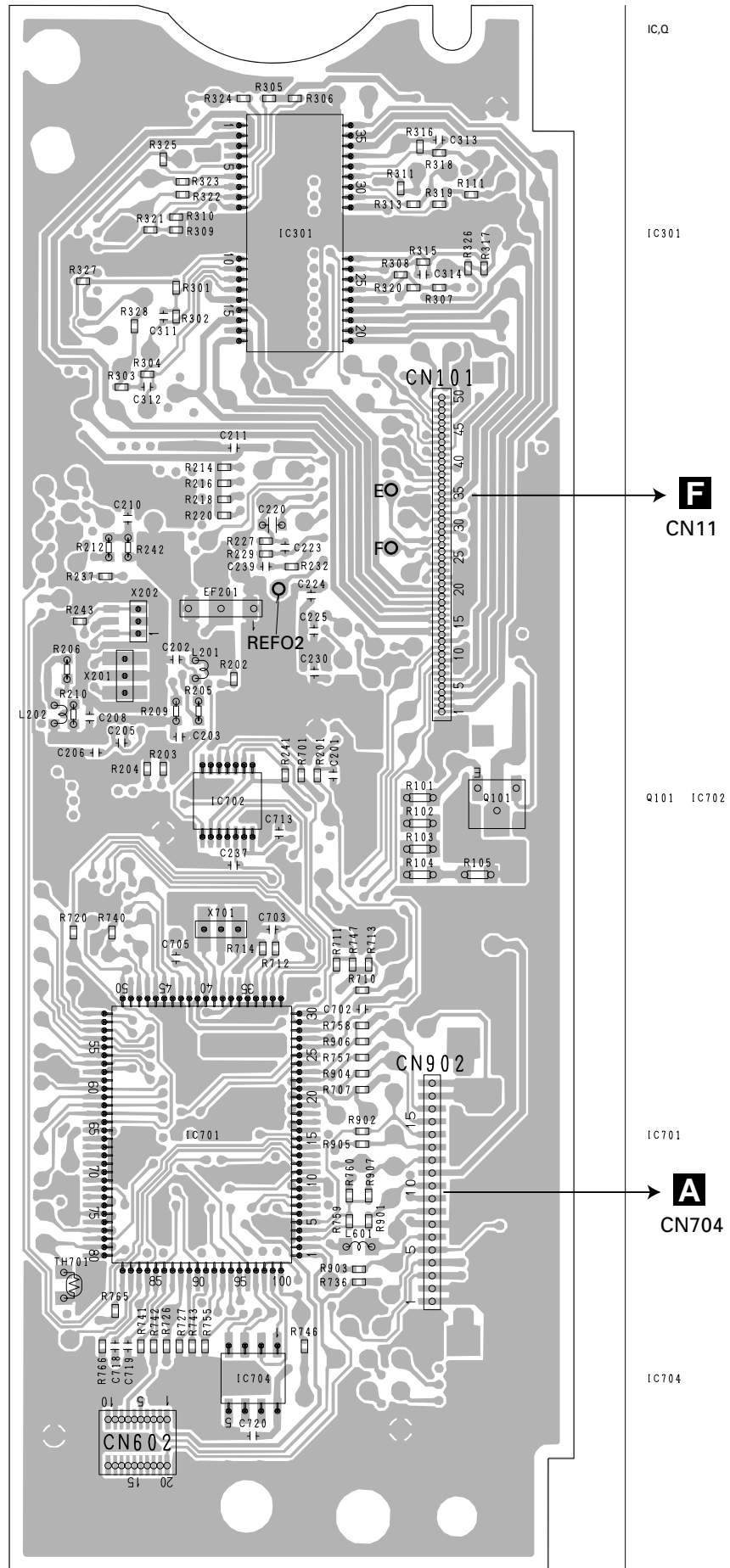
Q901

IC901

## 4.3 CD MECHANISM MODULE

**C** CONTROL UNIT  
(G2BM)

**SIDE A**



**F**  
CN11

**A**  
CN704

# **C** CONTROL UNIT (G2BM)

IC,Q

**SIDE B**

IC202 IC204

IC201

IC203

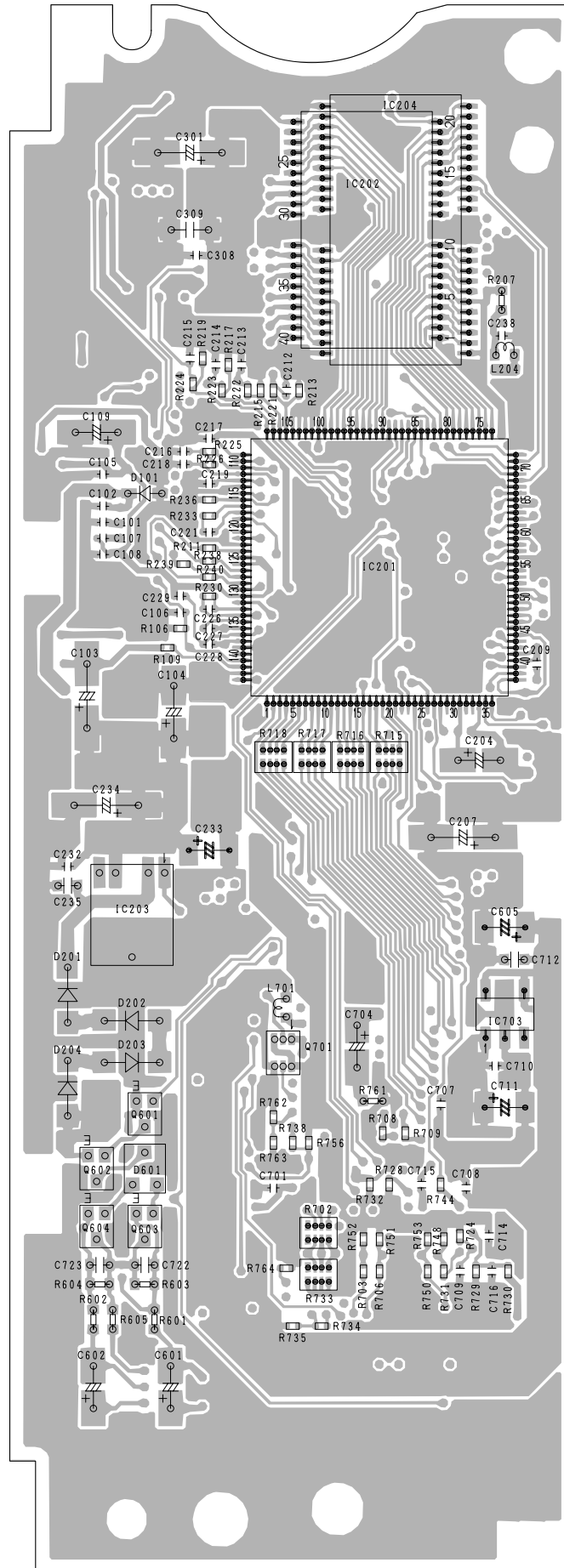
IC703

Q701

Q601

Q602

Q604 Q603



**D** PCB UNIT (LED)

**E** PCB UNIT (LOAD)

A

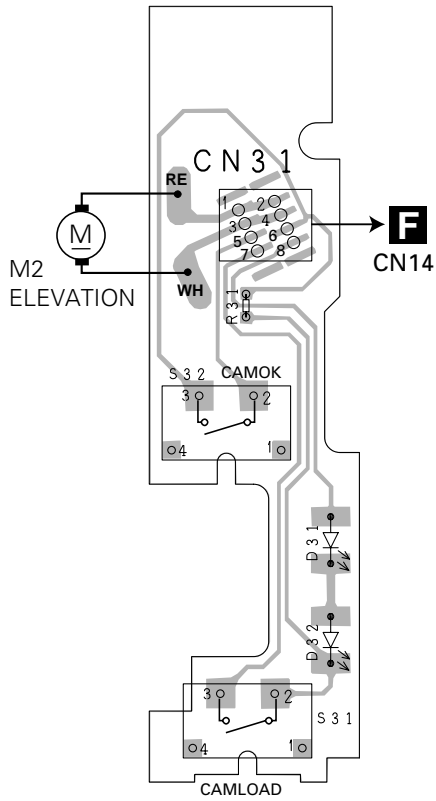
B

C

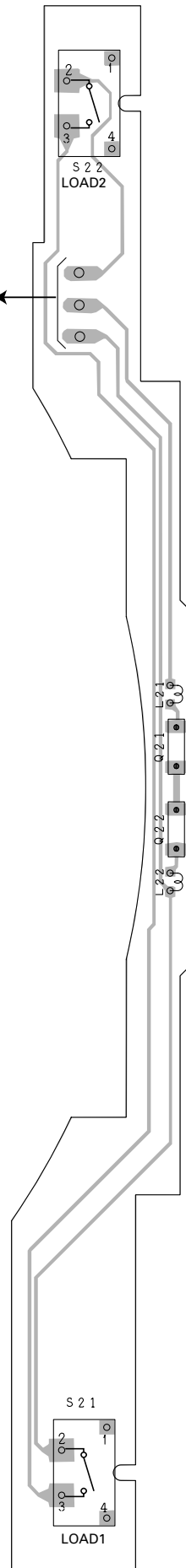
D

E

F



**F**  
CN13



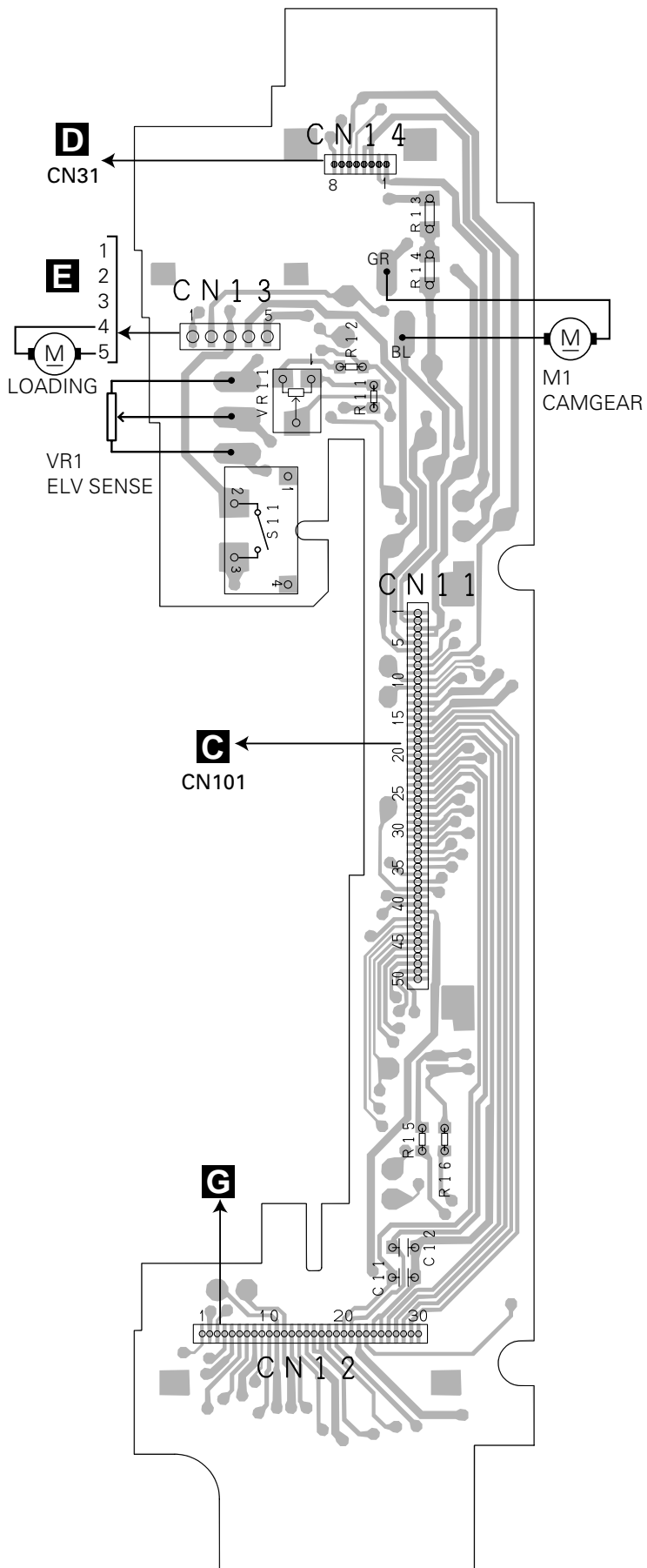
IC, Q

Q 2 1

Q 2 2

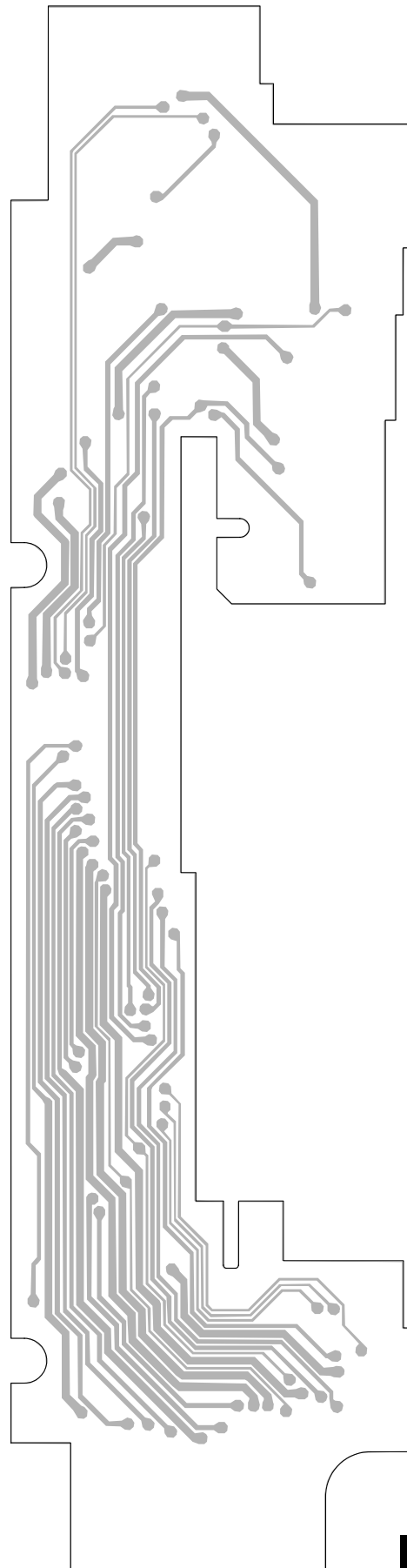
# **F** PCB UNIT (SIDE)

## **SIDE A**



# **F** PCB UNIT (SIDE)

## **SIDE B**



**G** PCB UNIT

A

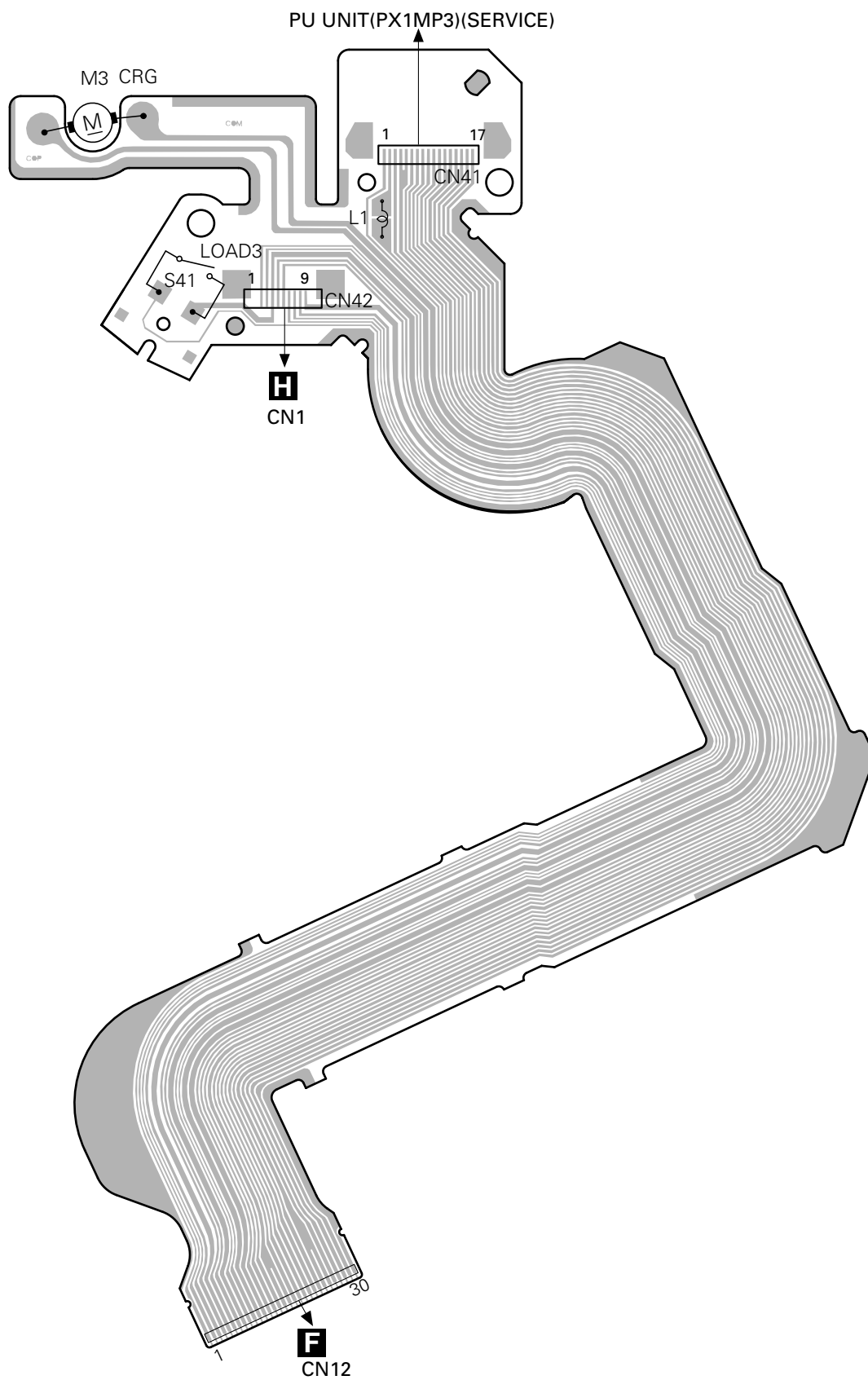
B

C

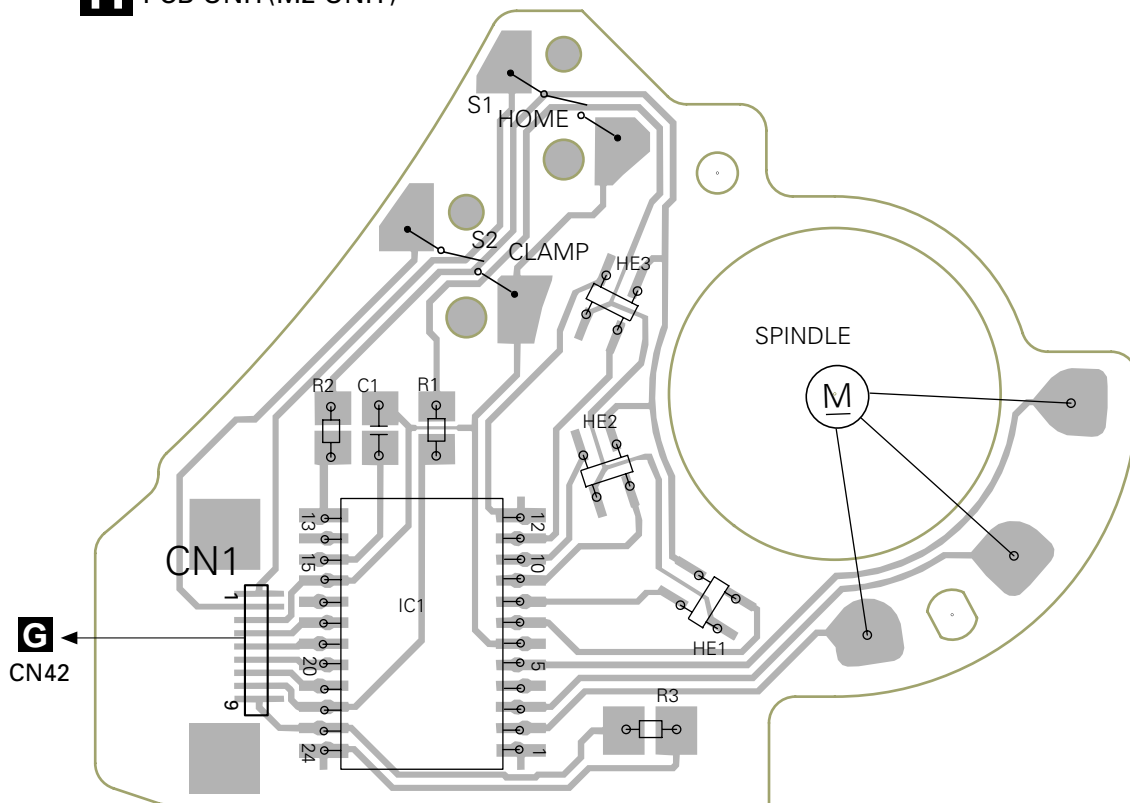
D

E

F



**H** PCB UNIT(M2 UNIT)



## 4.4 TUNER RELAY UNIT

A

**TUNER RELAY UNIT**

**SIDE A**

**TUNER RELAY UNIT**

**SIDE B**

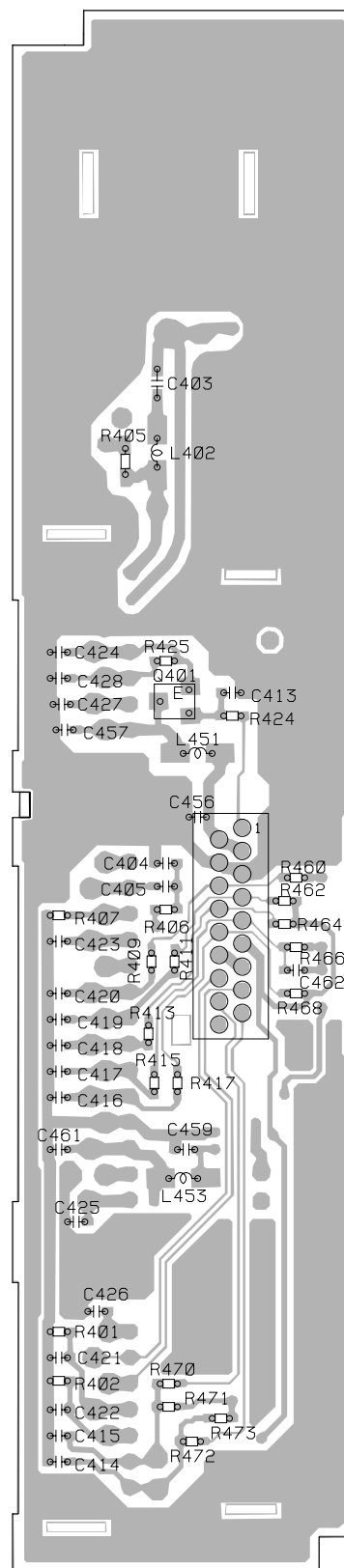
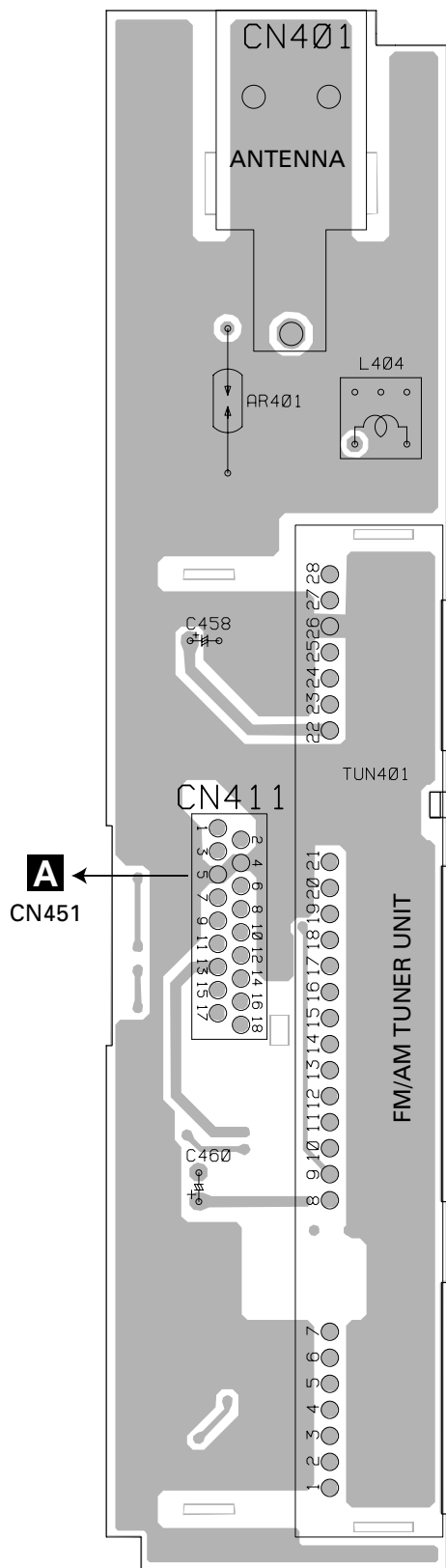
B

C

D

E

F



IC, Q

Q401



## 5. ELECTRICAL PARTS LIST

### NOTES:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
<b>A</b> Unit Number : CWM8234(DEH-MG8037ZF/XU/UC)		D 101 Diode	P300JL-5001
Unit Name : Mother Unit		D 102 Diode	DAN202U
MISCELLANEOUS		D 103 Diode	DAN202U
IC 101 IC	TDA7384	D 104 Diode	DAN202U
IC 111 IC	NJM2904V	D 381 Diode	HZU2R7(B1)
IC 112 IC	NJM2904V	D 382 Diode	1SS133
IC 301 IC	PM2010A	D 383 Diode	HZS6L(B2)
IC 302 IC	NJM4558V	D 384 Diode	HZS6L(C1)
IC 303 IC	NJM4558V	D 385 Diode	DAP202U
IC 304 IC	NJM4558V	D 386 Diode	DAN202U
IC 601 IC	PD5754A	D 387 Diode	1SS355
IC 602 IC	S-80843CNUA-B84	D 711 Diode	HZS6L(B2)
IC 604 IC	PDH053C	D 712 Diode	HZS12L(C1)
IC 605 IC	TC7S86F	D 801 Diode	1SS133
Q 101 Transistor	DTC124EU	D 802 Diode	HZS9L(A2)
Q 102 Transistor	DTC124EU	D 804 Diode	HZS6L(B1)
Q 104 Transistor	DTC124EU	D 805 Diode	HZS7L(C2)
Q 381 Transistor	2SB1184F5	D 806 Diode	HZS9L(B2)
Q 382 Transistor	2SA1162	D 807 Diode	HZS5LL(B)
Q 383 Transistor	DTC124EU	D 808 Diode	HZS9L(A1)
Q 384 Transistor	2SC4081	D 809 Diode	MPG06G-6415G3
Q 385 Transistor	DTC343TK	D 853 Diode	HZS9L(A3)
Q 386 Transistor	DTC343TK	D 871 Diode	HZS12L(B1)
Q 387 Transistor	IMX1	L 101 Choke Coil 600μH	CTH1221
Q 388 Transistor	DTA124EU	L 102 Inductor	CTF1449
Q 389 Transistor	IMD2A	L 301 Inductor	LCTA2R2J2520
Q 601 Transistor	2SB1238	L 302 Inductor	LCTA2R2J2520
Q 602 Transistor	DTA124EU	L 303 Inductor	LCTA2R2J2520
Q 604 Transistor	DTA124EU	L 304 Inductor	LCTA2R2J2520
Q 605 Transistor	DTC124EU	L 305 Inductor	CTF1379
Q 709 Transistor	2SC4081	L 306 Inductor	CTF1379
Q 710 Transistor	DTA124EU	L 307 Inductor	CTF1379
Q 711 Transistor	2SC4081	L 308 Inductor	CTF1379
Q 801 Transistor	2SC4081	L 309 Inductor	CTF1379
Q 802 Transistor	2SD2375	L 310 Inductor	CTF1379
Q 803 Transistor	2SC4081	L 311 Inductor	CTF1379
Q 804 Transistor	2SC4081	L 312 Inductor	CTF1379
Q 805 Transistor	2SC2712	L 313 Inductor	CTF1379
Q 806 Transistor	DTC124EU	L 314 Inductor	CTF1379
Q 807 Transistor	2SB1238	L 316 Inductor	CTF1379
Q 808 Transistor	IMX1	L 317 Inductor	CTF1379
Q 809 Transistor	2SB1185	L 318 Inductor	CTF1379
Q 810 Transistor	IMD3A	L 319 Inductor	CTF1379
Q 851 Transistor	2SB1185	L 320 Inductor	CTF1379
Q 852 Transistor	IMX1	L 321 Inductor	CTF1379
Q 853 Transistor	IMX1	L 331 Inductor	CTF1379
Q 854 Transistor	2SA1576	L 332 Inductor	CTF1379
Q 855 Transistor	2SB1185	L 333 Inductor	CTF1379
Q 863 Transistor	2SB1185	L 334 Inductor	CTF1379
Q 864 Transistor	IMX1	L 335 Inductor	CTF1379
Q 865 Transistor	IMD3A	L 341 Inductor	CTF1379
Q 871 Transistor	IMD3A	L 342 Inductor	CTF1379
Q 872 Transistor	2SD1859	L 343 Inductor	CTF1379
		L 344 Inductor	CTF1379
		L 601 Inductor	LCTA2R2J2520

====Circuit Symbol and No.==Part Name

Part No.

====Circuit Symbol and No.==Part Name

Part No.

A

L 602 Inductor  
L 771 Inductor  
TH 601 Thermistor  
X 301 Radiator 33.8688MHz  
X 601 Radiator 16.000MHz

LCTA2R2J2520  
LCTA2R2J2520  
CCX1015  
CSS1595  
CSS1571

R 373  
R 374  
R 375  
R 376  
R 377

RS1/16S0R0J  
RS1/16S0R0J  
RS1/16S473J  
RS1/16S473J  
RS1/16S102J

X 602 Radiator 32.768kHz  
M 871 Fan Motor

CSS1319  
CXM1283

R 378  
R 381

RS1/16S102J  
RS1/16S223J

## RESISTORS

R 382  
R 383  
R 384

RS1/16S332J  
RS1/16S0R0J  
RS1/16S0R0J

R 101  
R 102  
R 103  
R 104  
R 105

RS1/16S103J  
RS1/16S221J  
RS1/16S101J  
RS1/16S153J  
RS1/16S103J

R 389  
R 390  
R 391  
R 392  
R 394

RS1/16S103J  
RS1/16S103J  
RS1/16S221J  
RS1/16S822J  
RS1/16S473J

B

R 106  
R 109  
R 111  
R 112  
R 113

RS1/16S101J  
RS1/16S333J  
RS1/16S103J  
RS1/16S103J  
RS1/16S103J

R 395  
R 396  
R 397  
R 398  
R 399

RS1/16S473J  
RS1/16S391J  
RS1/16S471J  
RS1/16S121J  
RD1/4PU101J

R 114  
R 115  
R 116  
R 117  
R 118

RS1/16S103J  
RS1/16S104J  
RS1/16S104J  
RS1/16S104J  
RS1/16S104J

R 451  
R 452  
R 453  
R 454  
R 601

RS1/16S162J  
RS1/16S162J  
RS1/16S272J  
RS1/16S272J  
RS1/16S104J

R 119  
R 120  
R 121  
R 122  
R 123

RS1/16S682J  
RS1/16S821J  
RS1/16S682J  
RS1/16S821J  
RS1/16S682J

R 604  
R 605  
R 606  
R 607  
R 608

RS1/16S471J  
RS1/16S471J  
RS1/16S471J  
RS1/16S472J  
RS1/16S102J

C

R 124  
R 125  
R 126  
R 205  
R 206

RS1/16S821J  
RS1/16S682J  
RS1/16S821J  
RS1/16S0R0J  
RS1/16S0R0J

R 609  
R 610  
R 611  
R 612  
R 613

RS1/16S102J  
RS1/16S473J  
RS1/16S102J  
RS1/16S0R0J  
RS1/16S102J

R 211  
R 212  
R 301  
R 302  
R 307

RS1/16S0R0J  
RS1/16S0R0J  
RS1/16S101J  
RS1/16S225J  
RS1/16S471J

R 614  
R 616  
R 618  
R 619  
R 624

RS1/16S473J  
RS1/16S102J  
RS1/16S102J  
RS1/16S473J  
RS1/16S471J

D

R 308  
R 309  
R 311  
R 312  
R 313

RS1/16S471J  
RS1/16S471J  
RS1/16S471J  
RS1/16S471J  
RS1/16S471J

R 625  
R 626  
R 627  
R 628  
R 629

RS1/16S471J  
RS1/16S471J  
RS1/16S102J  
RS1/16S102J  
RAB4C102J

R 315  
R 317  
R 318  
R 351  
R 352

RS1/16S471J  
RS1/16S332J  
RS1/16S332J  
RS1/16S123J  
RS1/16S123J

R 631  
R 632  
R 633  
R 634  
R 636

RS1/16S682J  
RS1/16S682J  
RS1/16S473J  
RS1/16S471J  
RS1/16S471J

R 353  
R 354  
R 355  
R 356  
R 357

RS1/16S123J  
RS1/16S123J  
RS1/16S123J  
RS1/16S123J  
RS1/16S123J

R 637  
R 639  
R 640  
R 641  
R 642

RS1/16S471J  
RS1/16S102J  
RS1/16S473J  
RS1/16S682J  
RS1/16S682J

E

R 358  
R 359  
R 360  
R 361  
R 362

RS1/16S123J  
RS1/16S123J  
RS1/16S123J  
RS1/16S123J  
RS1/16S123J

R 643  
R 645  
R 646  
R 648  
R 650

RS1/16S682J  
RS1/16S102J  
RS1/16S473J  
RS1/16S0R0J  
RS1/16S473J

R 363  
R 364  
R 365  
R 366  
R 367

RS1/16S123J  
RS1/16S123J  
RS1/16S123J  
RS1/16S123J  
RS1/16S103J

R 651  
R 654  
R 655  
R 656  
R 657

RAB4C102J  
RS1/16S102J  
RS1/16S102J  
RS1/16S0R0J  
RS1/16S471J

R 368  
R 369  
R 370  
R 371  
R 372

RS1/16S103J  
RS1/16S103J  
RS1/16S103J  
RS1/16S103J  
RS1/16S103J

R 658  
R 659  
R 661  
R 664  
R 665

RS1/16S471J  
RS1/16S472J  
RS1/16S102J  
RAB4C472J  
RS1/16S471J

F

====Circuit Symbol and No.====Part Name

Part No.

====Circuit Symbol and No.====Part Name

Part No.

R 666	RS1/16S471J
R 667	RS1/16S471J
R 668	RAB4C473J
R 669	RS1/16S471J
R 670	RS1/16S473J
R 675	RS1/16S471J
R 678	RS1/16S471J
R 679	RS1/16S471J
R 680	RS1/16S471J
R 682	RS1/16S0R0J
R 684	RS1/16S473J
R 686	RS1/16S473J
R 687	RS1/16S102J
R 691	RAB4C102J
R 692	RS1/16S473J
R 693	RS1/16S473J
R 694	RS1/16S473J
R 695	RS1/16S473J
R 696	RS1/16S222J
R 697	RS1/16S222J
R 698	RS1/16S223J
R 699	RS1/16S223J
R 727	RS1/16S472J
R 731	RD1/4PU102J
R 733	RS1/16S104J
R 734	RS1/16S473J
R 735	RS1/16S473J
R 736	RS1/16S473J
R 737	RS1/16S472J
R 738	RS1/16S472J
R 739	RS1/16S473J
R 740	RS1/16S473J
R 741	RS1/16S0R0J
R 773	RS1/16S102J
R 791	RS1/16S152J
R 792	RS1/16S152J
R 801	RD1/4PU102J
R 802	RS1/16S473J
R 803	RS1/16S473J
R 804	RS1/16S471J
R 805	RS1/16S223J
R 806	RS1/16S473J
R 807	RS1/16S473J
R 808	RS1/16S473J
R 809	RS1/16S473J
R 810	RS1/16S472J
R 811	RS1/16S222J
R 812	RS1/16S102J
R 813	RD1/4PU821J
R 814	RS1/16S562J
R 815	RS1/16S223J
R 816	RS1/16S391J
R 817	RS1/16S471J
R 818	RS1/16S102J
R 819	RD1/4PU821J
R 820	RS1/16S471J
R 851	RS1/16S105J
R 852	RS1/16S471J
R 853	RS1/16S152J
R 854	RS1/16S222J
R 861	RS1/16S562J
R 862	RS1/16S223J
R 863	RS1/16S101J
R 864	RS1/16S471J
R 865	RS1/16S102J
R 866	RS1/16S101J
R 867	RS1/16S101J
R 868	RS1/16S101J
R 876	RD1/4PU1R8J
R 877	RS1/16S102J

R 878	RS1/16S105J
R 879	RS1/16S681J
R 880	RS1/16S152J
R 881	RS1/16S222J
R 882	RS1/16S681J
R 883	RS1/16S1R0J
R 1301	RS1/16S0R0J
R 1302	RS1/16S0R0J
R 1603	RS1/16S0R0J
R 1604	RS1/16S0R0J
R 1606	RS1/16S0R0J
R 1607	RS1/16S101J
R 1611	RS1/16S473J
R 1612	RS1/16S473J
R 1613	RS1/16S471J
R 1614	RS1/16S471J
R 1615	RS1/16S471J
R 1619	RS1/16S472J
R 1623	RS1/16S473J
R 1624	RS1/16S103J

## CAPACITORS

C 101	CEAT332M16
C 102	CKSRYB104K16
C 103	CEJQ1R0M50
C 104	CFTNA105J50
C 105	CEJQ100M16
C 106	CEAT330M16
C 107	CEJQR10M50
C 108	CKSRYB473K50
C 113	CKSRYB473K50
C 114	CKSRYB473K50
C 115	CKSRYB102K50
C 116	CKSRYB473K50
C 118	CKSRYB102K50
C 151	CFTNA224J50
C 152	CFTNA224J50
C 153	CFTNA224J50
C 154	CFTNA224J50
C 155	CKSRYB102K50
C 156	CKSRYB102K50
C 157	CKSRYB102K50
C 158	CKSRYB102K50
C 159	CKSRYB102K50
C 160	CKSRYB102K50
C 161	CKSRYB102K50
C 162	CKSRYB102K50
C 301	CCSRCH100D50
C 302	CCSRCH100D50
C 303	CKSRYB104K16
C 304	CEJQ220M6R3
C 305	CKSRYB104K16
C 306	CKSRYB104K16
C 307	CKSRYB104K16
C 308	CKSRYB104K16
C 309	CEJQ220M6R3
C 310	CEJQ220M6R3
C 311	CEJQNP3R3M25
C 312	CEJQNP3R3M25
C 313	CEJQNP3R3M25
C 314	CEJQNP3R3M25
C 315	CEJQ101M6R3
C 316	CKSRYB104K16
C 317	CKSRYB104K16
C 318	CEJQ220M6R3
C 319	CKSRYB222K50
C 320	CKSRYB104K16

====Circuit Symbol and No.==Part Name

Part No.

====Circuit Symbol and No.==Part Name

Part No.

A

C 321 CEJQ220M6R3  
C 322 CKSRYB104K16  
C 323 CASA100M6R3  
C 324 CEJQ220M6R3  
C 325 CKSRYB104K16

C 801 CEAT102M16(P35)  
C 802 CKSRYB473K50  
C 803 CEAT221M6R3  
C 804 CKSRYB104K16  
C 805 CEAL100M16

C 326 CEJQ220M6R3  
C 327 CKSRYB104K16  
C 328 CKSRYB222K50  
C 329 CKSRYB222K50  
C 330 CKSRYB222K50

C 806 CEAT331M6R3  
C 807 CKSRYB223K50  
C 808 CEAT101M10  
C 809 CKSRYB102K50  
C 810 CKSRYB473K50

C 331 CEJQ220M6R3  
C 332 CEJQ220M6R3  
C 333 CKSRYB104K16  
C 334 CKSRYB104K16  
C 335 CEJQ220M6R3

C 851 CKSRYB472K50  
C 852 CEAT101M10  
C 853 CKSRYB472K50  
C 854 CEAT101M10  
C 860 CKSRYB223K50

B

C 336 CEJQNP3R3M25  
C 337 CKSRYB104K16  
C 338 CKSRYB104K16  
C 341 CEJQ3R3M50  
C 342 CEJQ3R3M50

C 861 CEAT101M16  
C 862 CKSRYB102K50  
C 871 CKSRYB103K50  
C 872 CEJQ100M16  
C 873 CKSRYB103K50

C 343 CEJQ3R3M50  
C 344 CEJQ3R3M50  
C 348 CKSRYB102K50  
C 351 CEJQ100M16  
C 352 CEJQ100M16

**A** Unit Number : CWM8235(DEH-MG8137ZF/XU/UC)  
Unit Name : Mother Unit

## MISCELLANEOUS

C 353 CKSRYB102K50  
C 354 CKSRYB102K50  
C 355 CCSRCH221J50  
C 356 CCSRCH221J50  
C 359 CEJQ100M16

IC 101 IC TDA7384  
IC 111 IC NJM2904V  
IC 112 IC NJM2904V  
IC 301 IC PM2010A  
IC 302 IC NJM4558V

C

C 360 CEJQ100M16  
C 361 CKSRYB102K50  
C 362 CKSRYB102K50  
C 363 CCSRCH221J50  
C 364 CCSRCH221J50

IC 303 IC NJM4558V  
IC 601 IC PD5754A  
IC 602 IC S-80843CNUA-B84  
IC 604 IC PDH054C  
IC 605 IC TC7S86F

C 367 CEJQ100M16  
C 369 CKSRYB332K50  
C 372 CKSRYB332K50  
C 381 CKSRYB223K50  
C 382 CEAT101M10

Q 101 Transistor DTC124EU  
Q 102 Transistor DTC124EU  
Q 104 Transistor DTC124EU  
Q 381 Transistor 2SB1184F5  
Q 387 Transistor IMX1

D

C 384 CKSRYB332K50  
C 387 CEJQ100M16  
C 388 CEJQ100M16  
C 389 CKSRYB102K50  
C 393 CKSRYB102K50

Q 601 Transistor 2SB1238  
Q 602 Transistor DTA124EU  
Q 604 Transistor DTA124EU  
Q 605 Transistor DTC124EU  
Q 709 Transistor 2SC4081

C 394 CKSRYB102K50  
C 395 CKSRYB102K50  
C 451 CKSRYB183K50  
C 452 CKSRYB183K50  
C 601 CKSRYB102K50

Q 710 Transistor DTA124EU  
Q 711 Transistor 2SC4081  
Q 801 Transistor 2SC4081  
Q 802 Transistor 2SD2375  
Q 803 Transistor 2SC4081

E

C 602 CEJQ100M16  
C 603 CCSRCH220J50  
C 604 CCSRCH220J50  
C 605 CCSRCH220J50  
C 606 CCSRCH180J50

Q 804 Transistor 2SC4081  
Q 805 Transistor 2SC2712  
Q 806 Transistor DTC124EU  
Q 807 Transistor 2SB1238  
Q 808 Transistor IMX1

C 607 CKSRYB104K16  
C 609 CKSRYB104K16  
C 610 CCSRCH681J50  
C 611 CCSRCH681J50  
C 612 CEJQR22M50

Q 809 Transistor 2SB1185  
Q 810 Transistor IMD3A  
Q 851 Transistor 2SB1185  
Q 852 Transistor IMX1  
Q 853 Transistor IMX1

C 613 CEJQ220M6R3  
C 617 CKSRYB473K50  
C 712 CCSRCH221J50  
C 713 CCSRCH181J50  
C 714 CKSRYB102K50

Q 854 Transistor 2SA1576  
Q 855 Transistor 2SB1185  
Q 863 Transistor 2SB1185  
Q 864 Transistor IMX1  
Q 865 Transistor IMD3A

F

C 720 CKSRYB103K50  
C 721 CKSRYB473K50  
C 772 CEJQ100M16  
C 773 CKSRYB104K16  
C 778 CEAT471M10

Q 871 Transistor IMD3A  
Q 872 Transistor 2SD1859  
D 101 Diode P300JL-5001  
D 102 Diode DAN202U  
D 103 Diode DAN202U

====Circuit Symbol and No.==Part Name

Part No.

====Circuit Symbol and No.==Part Name

Part No.

D 104 Diode  
D 381 Diode  
D 711 Diode  
D 712 Diode  
D 801 Diode

DAN202U  
HZU2R7(B1)  
HZS6L(B2)  
HZS12L(C1)  
1SS133

R 119  
R 120  
R 121  
R 122  
R 123

RS1/16S682J  
RS1/16S821J  
RS1/16S682J  
RS1/16S821J  
RS1/16S682J

A

D 802 Diode  
D 804 Diode  
D 805 Diode  
D 806 Diode  
D 807 Diode

HZS9L(A2)  
HZS6L(B1)  
HZS7L(C2)  
HZS9L(B2)  
HZS5LL(B)

R 124  
R 125  
R 126  
R 205  
R 206

RS1/16S821J  
RS1/16S682J  
RS1/16S821J  
RS1/16S0R0J  
RS1/16S0R0J

D 808 Diode  
D 809 Diode  
D 853 Diode  
D 871 Diode  
L 101 Choke Coil 600μH

HZS9L(A1)  
MPG06G-6415G3  
HZS9L(A3)  
HZS12L(B1)  
CTH1221

R 211  
R 212  
R 301  
R 302  
R 307

RS1/16S0R0J  
RS1/16S0R0J  
RS1/16S101J  
RS1/16S225J  
RS1/16S471J

B

L 102 Inductor  
L 301 Inductor  
L 302 Inductor  
L 303 Inductor  
L 304 Inductor

CTF1449  
LCTA2R2J2520  
LCTA2R2J2520  
LCTA2R2J2520  
LCTA2R2J2520

R 308  
R 309  
R 311  
R 312  
R 313

RS1/16S471J  
RS1/16S471J  
RS1/16S471J  
RS1/16S471J  
RS1/16S471J

L 305 Inductor  
L 306 Inductor  
L 307 Inductor  
L 308 Inductor  
L 309 Inductor

CTF1379  
CTF1379  
CTF1379  
CTF1379  
CTF1379

R 315  
R 317  
R 318  
R 351  
R 352

RS1/16S471J  
RS1/16S332J  
RS1/16S332J  
RS1/16S123J  
RS1/16S123J

L 310 Inductor  
L 311 Inductor  
L 312 Inductor  
L 313 Inductor  
L 314 Inductor

CTF1379  
CTF1379  
CTF1379  
CTF1379  
CTF1379

R 353  
R 354  
R 355  
R 356  
R 357

RS1/16S123J  
RS1/16S123J  
RS1/16S123J  
RS1/16S123J  
RS1/16S123J

C

L 316 Inductor  
L 317 Inductor  
L 318 Inductor  
L 319 Inductor  
L 320 Inductor

CTF1379  
CTF1379  
CTF1379  
CTF1379  
CTF1379

R 358  
R 359  
R 360  
R 361  
R 362

RS1/16S123J  
RS1/16S123J  
RS1/16S123J  
RS1/16S123J  
RS1/16S123J

L 321 Inductor  
L 331 Inductor  
L 332 Inductor  
L 333 Inductor  
L 334 Inductor

CTF1379  
CTF1379  
CTF1379  
CTF1379  
CTF1379

R 363  
R 364  
R 365  
R 366  
R 373

RS1/16S123J  
RS1/16S123J  
RS1/16S123J  
RS1/16S123J  
RS1/16S0R0J

L 335 Inductor  
L 341 Inductor  
L 342 Inductor  
L 343 Inductor  
L 344 Inductor

CTF1379  
CTF1379  
CTF1379  
CTF1379  
CTF1379

R 374  
R 381  
R 382  
R 396  
R 397

RS1/16S0R0J  
RS1/16S223J  
RS1/16S332J  
RS1/16S391J  
RS1/16S471J

D

L 601 Inductor  
L 602 Inductor  
L 771 Inductor  
TH 601 Thermistor  
X 301 Radiator 33.8688MHz

LCTA2R2J2520  
LCTA2R2J2520  
LCTA2R2J2520  
CCX1015  
CSS1595

R 398  
R 451  
R 452  
R 453  
R 454

RS1/16S121J  
RS1/16S162J  
RS1/16S162J  
RS1/16S272J  
RS1/16S272J

X 601 Radiator 16.000MHz  
X 602 Radiator 32.768kHz  
M 871 Fan Motor

CSS1571  
CSS1319  
CXM1283

R 601  
R 604  
R 605  
R 606  
R 607

RS1/16S104J  
RS1/16S471J  
RS1/16S471J  
RS1/16S471J  
RS1/16S472J

E

## RESISTORS

R 101  
R 102  
R 103  
R 104  
R 105

RS1/16S103J  
RS1/16S221J  
RS1/16S101J  
RS1/16S153J  
RS1/16S103J

R 608  
R 609  
R 610  
R 611  
R 612

RS1/16S102J  
RS1/16S102J  
RS1/16S473J  
RS1/16S102J  
RS1/16S0R0J

R 106  
R 109  
R 111  
R 112  
R 113

RS1/16S101J  
RS1/16S333J  
RS1/16S103J  
RS1/16S103J  
RS1/16S103J

R 613  
R 614  
R 616  
R 618  
R 619

RS1/16S102J  
RS1/16S473J  
RS1/16S102J  
RS1/16S102J  
RS1/16S473J

R 114  
R 115  
R 116  
R 117  
R 118

RS1/16S103J  
RS1/16S104J  
RS1/16S104J  
RS1/16S104J  
RS1/16S104J

R 624  
R 625  
R 626  
R 627  
R 628

RS1/16S471J  
RS1/16S471J  
RS1/16S471J  
RS1/16S102J  
RS1/16S102J

F

====Circuit Symbol and No.==Part Name

Part No.

====Circuit Symbol and No.==Part Name

Part No.

A

R 629 RAB4C102J  
 R 631 RS1/16S682J  
 R 632 RS1/16S682J  
 R 633 RS1/16S473J  
 R 634 RS1/16S471J

R 809 RS1/16S473J  
 R 810 RS1/16S472J  
 R 811 RS1/16S222J  
 R 812 RS1/16S102J  
 R 813 RD1/4PU821J

R 636 RS1/16S471J  
 R 637 RS1/16S471J  
 R 639 RS1/16S102J  
 R 640 RS1/16S473J  
 R 641 RS1/16S682J

R 814 RS1/16S562J  
 R 815 RS1/16S223J  
 R 816 RS1/16S391J  
 R 817 RS1/16S471J  
 R 818 RS1/16S102J

R 642 RS1/16S682J  
 R 643 RS1/16S682J  
 R 645 RS1/16S102J  
 R 646 RS1/16S473J  
 R 648 RS1/16S0R0J

R 819 RD1/4PU821J  
 R 820 RS1/16S471J  
 R 851 RS1/16S105J  
 R 852 RS1/16S471J  
 R 853 RS1/16S152J

B

R 650 RS1/16S473J  
 R 651 RAB4C102J  
 R 654 RS1/16S102J  
 R 655 RS1/16S102J  
 R 656 RS1/16S0R0J

R 854 RS1/16S222J  
 R 861 RS1/16S562J  
 R 862 RS1/16S223J  
 R 863 RS1/16S101J  
 R 864 RS1/16S471J

R 657 RS1/16S471J  
 R 658 RS1/16S471J  
 R 659 RS1/16S472J  
 R 661 RS1/16S102J  
 R 664 RAB4C472J

R 865 RS1/16S102J  
 R 866 RS1/16S101J  
 R 867 RS1/16S101J  
 R 868 RS1/16S101J  
 R 876 RD1/4PU1R8J

R 665 RS1/16S471J  
 R 666 RS1/16S471J  
 R 667 RS1/16S471J  
 R 668 RAB4C473J  
 R 669 RS1/16S471J

R 877 RS1/16S102J  
 R 878 RS1/16S105J  
 R 879 RS1/16S681J  
 R 880 RS1/16S152J  
 R 881 RS1/16S222J

C

R 670 RS1/16S473J  
 R 675 RS1/16S471J  
 R 678 RS1/16S471J  
 R 679 RS1/16S471J  
 R 680 RS1/16S471J

R 882 RS1/16S681J  
 R 883 RS1/16S1R0J  
 R 1301 RS1/16S0R0J  
 R 1302 RS1/16S0R0J  
 R 1603 RS1/16S0R0J

R 682 RS1/16S0R0J  
 R 685 RS1/16S473J  
 R 686 RS1/16S473J  
 R 687 RS1/16S102J  
 R 691 RAB4C102J

R 1604 RS1/16S0R0J  
 R 1606 RS1/16S0R0J  
 R 1607 RS1/16S221J  
 R 1611 RS1/16S473J  
 R 1612 RS1/16S473J

D

R 692 RS1/16S473J  
 R 693 RS1/16S473J  
 R 694 RS1/16S473J  
 R 695 RS1/16S473J  
 R 696 RS1/16S222J

R 1613 RS1/16S471J  
 R 1614 RS1/16S471J  
 R 1615 RS1/16S471J  
 R 1619 RS1/16S472J  
 R 1623 RS1/16S473J

R 697 RS1/16S222J  
 R 698 RS1/16S223J  
 R 699 RS1/16S223J  
 R 727 RS1/16S472J  
 R 731 RD1/4PU102J

R 1624 RS1/16S103J

## CAPACITORS

R 733 RS1/16S104J  
 R 734 RS1/16S473J  
 R 735 RS1/16S473J  
 R 736 RS1/16S473J  
 R 737 RS1/16S472J

C 101 CEAT332M16  
 C 102 CKSRYB104K16  
 C 103 CEJQ1R0M50  
 C 104 CFTNA105J50  
 C 105 CEJQ100M16

E

R 738 RS1/16S472J  
 R 739 RS1/16S473J  
 R 740 RS1/16S473J  
 R 741 RS1/16S0R0J  
 R 773 RS1/16S102J

C 106 CEAT330M16  
 C 107 CEJQR10M50  
 C 108 CKSRYB473K50  
 C 113 CKSRYB473K50  
 C 114 CKSRYB473K50

R 791 RS1/16S152J  
 R 792 RS1/16S152J  
 R 801 RD1/4PU102J  
 R 802 RS1/16S473J  
 R 803 RS1/16S473J

C 115 CKSRYB102K50  
 C 116 CKSRYB473K50  
 C 118 CKSRYB102K50  
 C 151 CFTNA224J50  
 C 152 CFTNA224J50

R 804 RS1/16S471J  
 R 805 RS1/16S223J  
 R 806 RS1/16S473J  
 R 807 RS1/16S473J  
 R 808 RS1/16S473J

C 153 CFTNA224J50  
 C 154 CFTNA224J50  
 C 155 CKSRYB102K50  
 C 156 CKSRYB102K50  
 C 157 CKSRYB102K50

F

====Circuit Symbol and No.====Part Name

Part No.

C 158  
C 159  
C 160  
C 161  
C 162

CKSRYB102K50  
CKSRYB102K50  
CKSRYB102K50  
CKSRYB102K50  
CKSRYB102K50

C 301  
C 302  
C 303  
C 304  
C 305

CCSRCH100D50  
CCSRCH100D50  
CKSRYB104K16  
CEJQ220M6R3  
CKSRYB104K16

C 306  
C 307  
C 308  
C 309  
C 310

CKSRYB104K16  
CKSRYB104K16  
CKSRYB104K16  
CEJQ220M6R3  
CEJQ220M6R3

C 311  
C 312  
C 313  
C 314  
C 315

CEJQNP3R3M25  
CEJQNP3R3M25  
CEJQNP3R3M25  
CEJQNP3R3M25  
CEJQ101M6R3

C 316  
C 317  
C 318  
C 319  
C 320

CKSRYB104K16  
CKSRYB104K16  
CEJQ220M6R3  
CKSRYB222K50  
CKSRYB104K16

C 321  
C 322  
C 323  
C 324  
C 325

CEJQ220M6R3  
CKSRYB104K16  
CASA100M6R3  
CEJQ220M6R3  
CKSRYB104K16

C 326  
C 327  
C 328  
C 329  
C 330

CEJQ220M6R3  
CKSRYB104K16  
CKSRYB222K50  
CKSRYB222K50  
CKSRYB222K50

C 331  
C 332  
C 333  
C 334  
C 335

CEJQ220M6R3  
CEJQ220M6R3  
CKSRYB104K16  
CKSRYB104K16  
CEJQ220M6R3

C 336  
C 337  
C 338  
C 341  
C 342

CEJQNP3R3M25  
CKSRYB104K16  
CKSRYB104K16  
CEJQ3R3M50  
CEJQ3R3M50

C 343  
C 344  
C 348  
C 351  
C 352

CEJQ3R3M50  
CEJQ3R3M50  
CKSRYB102K50  
CEJQ100M16  
CEJQ100M16

C 353  
C 354  
C 355  
C 356  
C 359

CKSRYB102K50  
CKSRYB102K50  
CCSRCH221J50  
CCSRCH221J50  
CEJQ100M16

C 360  
C 361  
C 362  
C 363  
C 364

CEJQ100M16  
CKSRYB102K50  
CKSRYB102K50  
CCSRCH221J50  
CCSRCH221J50

C 381  
C 382  
C 389  
C 451  
C 452

CKSRYB222K50  
CEAT101M10  
CKSRYB102K50  
CKSRYB183K50  
CKSRYB183K50

C 601  
C 602  
C 603  
C 604  
C 605

CKSRYB102K50  
CEJQ100M16  
CCSRCH220J50  
CCSRCH220J50  
CCSRCH220J50

====Circuit Symbol and No.====Part Name

Part No.

C 606  
C 607  
C 609  
C 610  
C 611

CCSRCH180J50  
CKSRYB104K16  
CKSRYB104K16  
CCSRCH681J50  
CCSRCH681J50

C 612  
C 613  
C 617  
C 712  
C 713

CEJQ1R0M50  
CEJQ220M6R3  
CKSRYB473K50  
CCSRCH221J50  
CCSRCH181J50

C 714  
C 720  
C 721  
C 772  
C 773

CKSRYB102K50  
CKSRYB103K50  
CKSRYB473K50  
CEJQ100M16  
CKSRYB104K16

C 778  
C 801  
C 802  
C 803  
C 804

CEAT471M10  
CEAT102M16(P35)  
CKSRYB473K50  
CEAT221M6R3  
CKSRYB104K16

C 805  
C 806  
C 807  
C 808  
C 809

CEAL100M16  
CEAT331M6R3  
CKSRYB223K50  
CEAT101M10  
CKSRYB102K50

C 810  
C 851  
C 852  
C 853  
C 854

CKSRYB473K50  
CKSRYB472K50  
CEAT101M10  
CKSRYB472K50  
CEAT101M10

C 860  
C 861  
C 862  
C 871  
C 872

CKSRYB223K50  
CEAT101M16  
CKSRYB102K50  
CKSRYB103K50  
CEJQ100M16

C 873

CKSRYB103K50

**B** Unit Number : CWM8236  
Unit Name : Keyboard Unit

## MISCELLANEOUS

IC 901 IC  
Q 901 Transistor  
Q 902 Transistor  
Q 903 Transistor  
Q 904 Transistor

LC75813E  
DTC114EU  
DTC114EU  
DTC114EU  
DTC114EU

Q 905 Transistor  
Q 906 Transistor  
D 911 LED  
D 912 LED  
D 913 LED

DTC124EU  
DTA114EU  
SML-310PT(KL)  
SML-310PT(KL)  
SML-310PT(KL)

D 914 LED  
D 915 LED  
D 916 LED  
D 917 LED  
D 918 LED

SML-310PT(KL)  
SML-310PT(KL)  
SML-310PT(KL)  
SML-310PT(KL)  
SML-310PT(KL)

D 919 LED  
D 920 LED  
D 921 LED  
D 922 LED  
D 923 LED

SML-310PT(KL)  
SML-310PT(KL)  
SML-310PT(KL)  
SML-310PT(KL)  
SML-310PT(KL)

D 924 LED  
D 925 LED  
D 926 LED  
D 927 LED  
D 928 LED

SML-310PT(KL)  
SML-310PT(KL)  
SML-310PT(KL)  
SML-310PT(KL)  
SML-310PT(KL)

D 929 LED  
D 930 LED  
D 931 LED  
D 932 LED  
D 933 LED

SML-310PT(KL)  
SML-310PT(KL)  
SML-310PT(KL)  
SML-310PT(KL)  
SML-010PT(KL)

====Circuit Symbol and No.==Part Name

Part No.

====Circuit Symbol and No.==Part Name

Part No.

A

D 934 LED SML-010PT(KL)  
 D 935 LED SML-010PT(KL)  
 D 936 LED SML-010PT(KL)  
 D 937 LED SML-310PT(KL)  
 D 938 LED SML-310PT(KL)

R 948 RS1/16S151J  
 R 949 RS1/16S101J  
 R 950 RS1/16S151J  
 R 951 RS1/16S101J  
 R 952 RS1/16S101J

D 939 LED SML-310PT(KL)  
 D 940 LED SML-310PT(KL)  
 D 941 LED SML-310PT(KL)  
 D 942 LED SML-310PT(KL)  
 D 943 LED SML-310PT(KL)

R 953 RS1/16S101J  
 R 954 RS1/16S101J  
 R 955 RS1/16S101J  
 R 956 RS1/16S101J  
 R 957 RS1/16S101J

D 944 LED SML-310PT(KL)  
 D 945 LED SML-310PT(KL)  
 D 946 LED SML-310PT(KL)  
 D 947 LED SML-310PT(KL)  
 D 948 LED SML-310PT(KL)

R 958 RS1/16S101J  
 R 959 RS1/16S101J  
 R 960 RS1/16S101J  
 R 961 RS1/16S101J  
 R 962 RS1/16S101J

B

D 949 LED SML-310PT(KL)  
 D 950 LED SML-310PT(KL)  
 D 951 Diode DAN202U  
 D 952 Diode DAN202U  
 D 953 Diode 1SS355

R 971 RS1/16S473J

## CAPACITORS

D 954 Diode 1SS355  
 D 955 Diode 1SS355  
 D 956 Diode 1SS355  
 D 961 LED SML-310PT(KL)  
 D 962 LED SML-310PT(KL)

C 901 CKSRYB102K50  
 C 902 CCSRCH681J50  
 C 903 CKSRYB104K16  
 C 904 CKSRYB104K16  
 C 905 CKSRYB102K50

Unit Number : CWM8263

Unit Name : Tuner Relay Unit

## MISCELLANEOUS

C

L 901 Inductor  
 IL 901 Lamp 8V 105mA  
 IL 902 Lamp 8V 105mA  
 VR 901 Encoder(VOLUME/POWER)  
 LCD 904 LCD

CTF1379  
 CEL1747  
 CEL1747  
 CSD1073  
 CAW1822

Q 401 Transistor 2SC2712  
 L 402 Inductor LCTA4R7J2520  
 L 404 Coil CTB1112  
 L 451 Inductor LCTA1R0J2520  
 L 453 Inductor LCTA2R2J2520

## RESISTORS

R 901 RS1/16S473J  
 R 902 RS1/16S472J  
 R 903 RS1/16S472J  
 R 904 RS1/16S472J  
 R 905 RS1/16S102J

FM/AM Tuner Unit  
 AR 401 CWE1561  
 DSP-201M-S00B

## RESISTORS

R 906 RS1/16S102J  
 R 907 RS1/16S102J  
 R 908 RS1/16S102J  
 R 921 RS1/16S101J  
 R 922 RS1/16S151J

R 405 RS1/10S222J  
 R 406 RS1/16S473J  
 R 407 RS1/16S473J  
 R 409 RS1/16S681J  
 R 411 RS1/16S681J

D

R 923 RS1/16S101J  
 R 924 RS1/16S151J  
 R 925 RS1/16S101J  
 R 926 RS1/16S151J  
 R 927 RS1/16S101J

R 413 RS1/16S681J  
 R 415 RS1/16S103J  
 R 417 RS1/16S681J  
 R 424 RS1/16S222J  
 R 460 RS1/16S473J

R 928 RS1/16S151J  
 R 929 RS1/16S101J  
 R 930 RS1/16S151J  
 R 931 RS1/16S101J  
 R 932 RS1/16S151J

R 462 RS1/16S473J  
 R 464 RS1/16S472J  
 R 466 RS1/16S393J  
 R 468 RS1/16S473J  
 R 470 RS1/16S681J

E

R 933 RS1/16S101J  
 R 934 RS1/16S151J  
 R 935 RS1/16S101J  
 R 936 RS1/16S151J  
 R 937 RS1/16S101J

R 471 RS1/16S473J  
 R 472 RS1/16S681J  
 R 473 RS1/16S473J

## CAPACITORS

R 938 RS1/16S151J  
 R 939 RS1/16S101J  
 R 940 RS1/16S151J  
 R 941 RS1/16S101J  
 R 942 RS1/16S151J

C 403 CKSYB103K50  
 C 404 CKSRYB332K50  
 C 405 CKSRYB682K50  
 C 413 CKSRYB103K50  
 C 421 CCSRCH331J50

R 943 RS1/16S101J  
 R 944 RS1/16S101J  
 R 945 RS1/16S101J  
 R 946 RS1/16S101J  
 R 947 RS1/16S101J

C 422 CKSRYB182K50  
 C 423 CKSRYB102K50  
 C 424 CKSRYB103K50  
 C 425 CKSRYB102K50  
 C 426 CKSRYB102K50

F



====Circuit Symbol and No.==Part Name

Part No.

C	457		CKSRYB103K50
C	458		CEJQ220M10
C	460		CEJQ101M6R3
C	461		CKSRYB473K50
C	462		CKSRYB472K50



Unit Number : CWX2713

Unit Name : Control Unit(G2BM)

## MISCELLANEOUS

IC	201	IC	UPD63760GJ
IC	203	IC	BA033SFP
IC	204	IC	MSM51V18165FP-60TS
IC	301	IC	BD7962FM
IC	701	IC	PE5335B
IC	702	IC	TC74VHCT08AFT
IC	703	IC	S-818A33AUC-BGN
Q	101	Transistor	2SB1132
Q	601	Transistor	DTC114EU
Q	602	Transistor	DTA123JU
Q	603	Transistor	DTC314TU
Q	604	Transistor	DTC314TU
Q	701	Transistor	UMD3N
D	101	Diode	1SS355
D	201	Diode	S1G-6904G2P
D	202	Diode	S1G-6904G2P
D	203	Diode	S1G-6904G2P
D	204	Diode	S1G-6904G2P
D	601	Chip Diode	MA151WA
L	201	Inductor	CTF1386
L	202	Inductor	CTF1386
L	204	Inductor	CTF1386
L	601	Inductor	CTF1295
L	701	Inductor	CTF1546
TH	701	Thermistor	CCX1015
X	201	Ceramic Resonator 16.930MHz	CSS1569
X	701	Ceramic Resonator 16MHz	CSS1576
EF	201		CCG1051

## RESISTORS

R	101		RS1/10S1R5J
R	102		RS1/10S1R5J
R	103		RS1/10S1R5J
R	104		RS1/10S1R5J
R	105		RS1/10S1R5J
R	109		RS1/16SS0R0J
R	111		RS1/16SS102J
R	201		RS1/16SS102J
R	202		RS1/16SS333J
R	203		RS1/16SS333J
R	204		RS1/16SS333J
R	205		RS1/16S0R0J
R	206		RS1/16S0R0J
R	207		RS1/16S0R0J
R	209		RS1/16S0R0J
R	210		RS1/16S0R0J
R	211		RS1/16SS0R0J
R	212		RS1/16S0R0J
R	213		RS1/16SS1002D
R	214		RS1/16SS1002D
R	215		RS1/16SS1002D
R	216		RS1/16SS1002D
R	217		RS1/16SS1002D
R	218		RS1/16SS1002D
R	219		RS1/16SS1002D
R	220		RS1/16SS1002D
R	221		RS1/16SS103J
R	222		RS1/16SS103J
R	223		RS1/16SS103J
R	224		RS1/16SS103J

====Circuit Symbol and No.==Part Name

Part No.

R	225		RS1/16SS103J
R	226		RS1/16SS393J
R	227		RS1/16SS822J
R	229		RS1/16SS103J
R	232		RS1/16SS101J
R	233		RS1/16SS0R0J
R	236		RS1/16SS222J
R	237		RS1/16SS104J
R	238		RS1/16SS0R0J
R	239		RS1/16SS0R0J
R	240		RS1/16SS0R0J
R	241		RS1/16SS473J
R	242		RS1/16S0R0J
R	243		RS1/16SS473J
R	301		RS1/16SS123J
R	302		RS1/16SS333J
R	303		RS1/16SS123J
R	304		RS1/16SS223J
R	305		RS1/16SS272J
R	306		RS1/16SS272J
R	307		RS1/16SS182J
R	308		RS1/16SS272J
R	309		RS1/16SS682J
R	310		RS1/16SS822J
R	311		RS1/16SS103J
R	313		RS1/16SS103J
R	315		RS1/16SS333J
R	316		RS1/16SS393J
R	317		RS1/16SS103J
R	318		RS1/16SS103J
R	319		RS1/16SS102J
R	320		RS1/16SS392J
R	321		RS1/16SS153J
R	322		RS1/16SS103J
R	323		RS1/16SS103J
R	324		RS1/16SS103J
R	325		RS1/16SS103J
R	326		RS1/16SS0R0J
R	327		RS1/16SS0R0J
R	328		RS1/16SS0R0J
R	601		RS1/16S101J
R	602		RS1/16S101J
R	603		RS1/16S223J
R	604		RS1/16S223J
R	605		RS1/16S0R0J
R	701		RS1/16SS473J
R	702		RAB4CQ222J
R	703		RS1/16SS222J
R	706		RS1/16SS222J
R	707		RS1/16SS0R0J
R	708		RS1/16SS102J
R	709		RS1/16SS102J
R	710		RS1/16SS102J
R	711		RS1/16SS102J
R	712		RS1/16SS222J
R	713		RS1/16SS473J
R	714		RS1/16SS473J
R	715		RAB4CQ221J
R	716		RAB4CQ221J
R	717		RAB4CQ221J
R	718		RAB4CQ221J
R	720		RS1/16SS221J
R	724		RS1/16SS333J
R	726		RS1/16SS103J
R	727		RS1/16SS473J
R	728		RS1/16SS473J
R	729		RS1/16SS223J
R	730		RS1/16SS473J
R	731		RS1/16SS104J
R	732		RS1/16SS104J

====Circuit Symbol and No.==Part Name

Part No.

====Circuit Symbol and No.==Part Name

Part No.

A

R 733  
R 734  
R 735  
R 738  
R 740RAB4CQ104J  
RS1/16SS472J  
RS1/16SS473J  
RS1/16SS222J  
RS1/16SS473JC 235  
C 237  
C 238  
C 239  
C 301CKSRYB224K16  
CKSSYB104K10  
CKSSYB104K10  
CCSSCH150J50  
CEV101M10R 741  
R 742  
R 743  
R 744  
R 746RS1/16SS473J  
RS1/16SS473J  
RS1/16SS473J  
RS1/16SS221J  
RS1/16SS104JC 308  
C 309  
C 311  
C 312  
C 313CKSSYB104K10  
CKSYB475K16  
CCSSCH181J25  
CKSSYB271K50  
CKSSYB472K25R 747  
R 748  
R 750  
R 751  
R 752RS1/16SS104J  
RS1/16SS222J  
RS1/16SS222J  
RS1/16SS104J  
RS1/16SS104JC 314  
C 601  
C 602  
C 701  
C 702CKSSYB272K50  
CEV220M6R3  
CEV220M6R3  
CKSSYB104K10  
CKSSYB471K50

B

R 753  
R 755  
R 756  
R 757  
R 758RS1/16SS154J  
RS1/16SS473J  
RS1/16SS104J  
RS1/16SS473J  
RS1/16SS473JC 703  
C 704  
C 705  
C 707  
C 708CKSSYB103K16  
CEV1R0M50  
CKSSYB104K10  
CKSSYB104K10  
CKSSYB104K10R 759  
R 760  
R 761  
R 762  
R 764RS1/16SS0R0J  
RS1/16SS473J  
RS1/16S0R0J  
RS1/16SS104J  
RS1/16SS473JC 709  
C 710  
C 711  
C 712  
C 713

47μF/6.3V

CKSSYB103K16  
CKSSYB104K10  
CCH1436  
CKSRYB224K16  
CKSSYB104K10R 765  
R 766  
R 901  
R 902  
R 903RS1/16SS473J  
RS1/16SS473J  
RS1/16SS221J  
RS1/16SS221J  
RS1/16SS221JC 714  
C 715  
C 716  
C 719  
C 720CKSSYB104K10  
CKSSYB473K10  
CKSSYB103K16  
CKSSYB103K16  
CKSSYB104K10

C

R 904  
R 905  
R 906  
R 907RS1/16SS221J  
RS1/16SS221J  
RS1/16SS221J  
RS1/16SS221JC 722  
C 723CCSRCH102J50  
CCSRCH102J50

## CAPACITORS

C 101  
C 102  
C 103  
C 104  
C 105CKSSYB104K10  
CKSSYB104K10  
CEV101M16  
CEV101M4  
CKSSYB104K10Q 21 Photo-transistor  
Q 22 Photo-transistor  
L 21 Inductor  
L 22 Inductor  
S 21 Switch(LOAD1)CPT231SCTU  
CPT231SCTU  
LCYBR15J1608  
LCYBR15J1608  
CSN1051

D

C 106  
C 108  
C 109  
C 201  
C 202CKSSYB102K50  
CKSSYB104K10  
CEV100M16  
CKSSYB471K50  
CKSSYB104K10

S 22 Spring Switch(LOAD2)

CSN1052

C 203  
C 204  
C 205  
C 206  
C 207CKSSYB104K10  
CEV220M6R3  
CKSSYB103K16  
CKSSYB103K16  
CEV221M4D 31 Chip LED  
D 32 Chip LED  
S 31 Spring Switch(CAMLOAD)  
S 32 Spring Switch(CAMEOK)  
R 31CL205IRXTU  
CL205IRXTU  
CSN1052  
CSN1052  
RS1/16S0R0JC 208  
C 209  
C 210  
C 211  
C 216CKSSYB104K10  
CKSSYB104K10  
CKSSYB104K10  
CKSSYB104K10  
CKSSYB182K50**G** Unit Number : CWX2611  
Unit Name : PCB UnitL 1 Inductor  
S 41 Switch(LOAD3)CTF1389  
CSN1051

E

C 217  
C 218  
C 219  
C 220  
C 221CKSSYB104K10  
CKSSYB473K10  
CKSSYB104K10  
CKSRYB152K50  
CKSSYB104K10**F** Unit Number : CWX2613  
Unit Name : PCB Unit(SIDE)

## MISCELLANEOUS

S 11 Spring Switch(CAMCLMP)  
VR 11 Semi-fixed 1kΩ(B)CSN1052  
CCP1338

## RESISTORS

R 11  
R 12  
R 13  
R 14  
R 15RS1/16S562J  
RS1/16S562J  
RS1/10S391J  
RS1/10S391J  
RS1/16S0R0JC 228  
C 230  
C 232  
C 233  
C 234

47μF/6.3V

CKSSYB682K25  
CKSSYB104K10  
CKSSYB104K10  
CCH1436  
CEV221M4

R 16

RS1/16S0R0J

F

====Circuit Symbol and No.====Part Name

Part No.

## CAPACITORS

C 12

CKSRYB104K25



Unit Number : CWX2760

Unit Name : PCB Unit

## MISCELLANEOUS

IC      1      IC

BA6849FS

S	1	Switch(HOME)
---	---	--------------

CSN1057

S	2	Switch(Clamp)
---	---	---------------

CSN1057

## RESISTORS

R 1

RS1/16S221J

R 2

RS1/16S221J

R 3

RS1/10SR47J

## CAPACITORS

C 1

CKSRYB104K16

## Miscellaneous Parts List

M	1	Motor Unit(CAMGEAR)
---	---	---------------------

CXC1144

M	1	Motor Unit(CAMGEAR)
M	2	Motor Unit(ELEVATION)

CXC1145

M	2	Motor Unit(ELEVATION)
M	3	Motor Unit(-A)(CRG)

CXC1143

VR	1	Variable Resistor 10kΩ
----	---	------------------------

CCW1023

PU Unit(PX1MP3)(Service)

CXX1600

## 6. ADJUSTMENT

### 6.1 TEST MODE

[4] + [6]
Internal CD-CH
Error number displayed
CD ERRXX



[CD]
CD On
CD *
(*: Disc number)



To the CD Test Mode



Rest the Microcomputer to  
returning to the normal  
mode.(\*1)

Notes:

\*1) Note that the test mode is cancelled in the system microcomputer by switching the ACC OFF and ON, but that it is not in the CD microcomputer. Use the reset function for complete cancellation of the test mode.

## 6.2 CD ADJUSTMENT

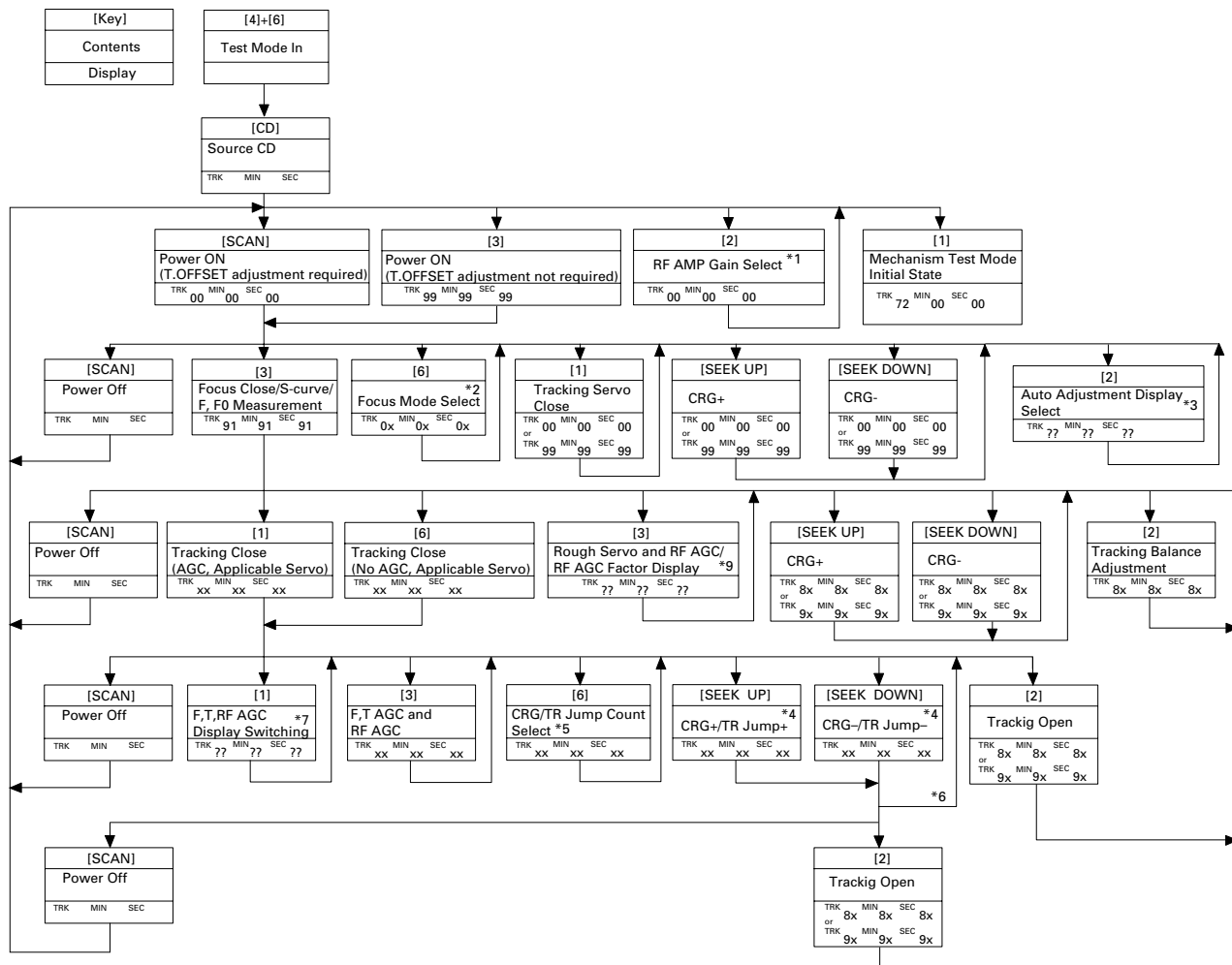
### 1) Precautions on Adjustment

- The unit employs a single voltage (+5V) for the regulator, thus the reference potential of the signal is REFO (approximately 2.5V) rather than GND. Inadvertent contact of REFO and GND during adjustment can result not only in disabling normal potential measurement but also in exposing the pickup to strong impacts due to malfunctioning of the servo. Therefore, you are requested to observe the following precautions.
- Make sure that the negative probe of the measuring instrument is not connected to REFO or GND. Special care must be exercised so that the channel 1 negative probe may not be connected to the oscilloscope and the channel 2 negative probe to GND. Since the frame of the measuring instrument is usually at the same potential as the negative probe, the frame of the measuring instrument must be changed to floating status. When REFO is inadvertently connected to GND, you must immediately turn off the regulator or power supply.
- The regulator must be turned off before mounting or dismounting filters or wiring materials.
- You should not start adjustment or measurement immediately after the regulator is turned on. It is recommended to run the player for approximately one minute so that it may stabilize.
- When the test mode is turned on, various protective functions from the software become unavailable. Thus, you must make sure that undesirable electric or mechanical shocks are not be given to the system.
- This model employs a photo-transistor for detecting discs at their loading or ejection. Thus, if its outer case is removed during repair work and internal parts are exposed to light of strong intensity, malfunctions including the following can result:
  - \* The eject button becomes inoperable during play. Pressing the eject button does not eject a disc and play is continued.
  - \* Loading becomes unavailable.If a malfunction is recognized, appropriate remedial actions must be taken. Such actions include changing the light source position, changing the unit position and applying a cover to the photo-transistor.
- When you press the EJECT key to eject a disc, you must not touch any other key until the ejection is complete.
- If you press the UP or DOWN for the focus search in the test mode, you must turn the power off immediately. (Otherwise, the lens will be forced to stick to the top or bottom, potentially resulting in the burning of the actuator.)

### 2) Description of the Test Mode

- Turning on the Test Mode  
See page 60.
- Ending the Test Mode  
Apply the reset (the reset will be applied two minutes after the power is turned from off).
- Operation of TR JUMPs (except 100TR) continues after your finger has left the key. CRG, MOVE and 100TR JUMP are forced to the tracking close mode as soon as the key is released.
- Turning the power on or off resets the JUMP MODE to the Single TR.

## Flow Chart



- \*1) TYP → -6dB → -12dB  
 TRK MIN SEC → TRK<sub>06</sub> MIN<sub>06</sub> SEC<sub>06</sub> → TRK<sub>12</sub> MIN<sub>12</sub> SEC<sub>12</sub>
- \*2) Focus Close → S.Curve Check → LD Off  
 TRK<sub>00</sub> MIN<sub>00</sub> SEC<sub>00</sub> → TRK<sub>01</sub> MIN<sub>01</sub> SEC<sub>01</sub> → TRK<sub>02</sub> MIN<sub>02</sub> SEC<sub>02</sub>  
 (TRK<sub>99</sub> MIN<sub>99</sub> SEC<sub>99</sub>)
- \*3) F.Offset Display → RF Offset Display → T.Bal Display → Rough Servo.  
 (F.Cancel value  
 = (Upper 8 bits of the setting (7[F][H] to 80[H] + 128)/4  
 = 63[D] to 32[D] to 00[D]).
- \*4) Single TR / 4TR / 10TR / 32TR / 100TR
- \*5) Single TR → 4 TR → 10 TR → 32 TR → 100 TR → CRG Move  
 9X(8X):91(81) 92(82) 93(83) 94(84) 95(85) 96(86)
- \*6) Only for the CRG Move and 100TR modes
- \*7) Track No. / Min / Sec → F.AGC Gain → T.AGC Gain → RF AGC Gain  
 (F.T. AGC Gain = (Current value/Initial value) x 20)
- \*8) CRG motor voltage : 2 [ V ]
- \*9) The first press displays the RF AGC coefficient. The second one or after performs the rough servo and RF AGC adjustments, and then displays the RF AGC coefficient.

- In all TR Jump modes except for 100TR, track jump operation continues even after the key is released.
- In the CRG Move and 100TR Jump modes, the tracking servo loop closes at the same time when the key is released.
- When the power is turned off and on, the jump mode, the RF AMP gain setting, and the auto adjustment values are reset to the Single TR (91), 0dB, and the factory setting respectively.

Note: When you pressed the [SEEK UP] or [SEEK DOWN] key during the Focus Search, you must turn the power off immediately (otherwise, the lens can stick resulting in actuator damages).

[Key]	Operation
	Test Mode
[SCAN]	Power ON/OFF
[SEEK UP]	CRG+/TR Jump+ (Toward outer perimeter)
[SEEK DOWN]	CRG-/TR Jump- (Toward inner perimeter)
[1]	Tracking close and AGC and Applicable servo / AGC , AGC display switching
[2]	RF gain select / Offset adjustment display / Tracking balance adjustment / Tracking open
[3]	Focus Close, S.Curve / Rough Servo/ RF AGC / F,T, RF AGC
[6]	Focus mode select / Tracking close / CRG-TR jump select
[4]	Focus open
[5]	Jump off
[DISC UP]	DISC UP
[DISC DOWN]	DISC DOWN

## 6.3 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT



### • Note :

The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

### • Purpose :

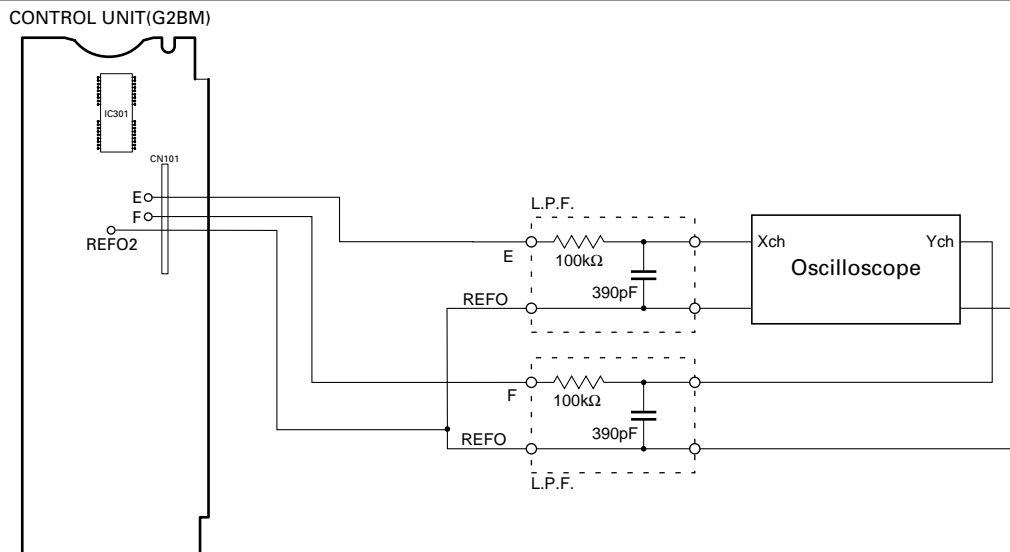
To check that the grating is within an acceptable range when the PU unit is changed.

### • Symptoms of Mal-adjustment :

If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

### • Method :

- Measuring Equipment
- Measuring Points
- Disc
- Mode
- Oscilloscope, Two L.P.F.
- E, F, REFO
- ABEX TCD-784
- TEST MODE



### • Checking Procedure

1. In test mode, load the disc and switch the 5V regulator on.
2. Using the **SEEK UP** and **SEEK DOWN** buttons, move the PU unit to the innermost track.
3. Press key **3** to close focus, the display should read "91". Press key **2** to implement the tracking balance adjustment the display should now read "81". Press key **3** 4 times. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within  $75^\circ$ . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than  $75^\circ$  try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than  $75^\circ$  then the mechanism should be judged to be at fault.

### • Note

Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" ( the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

### • Hint

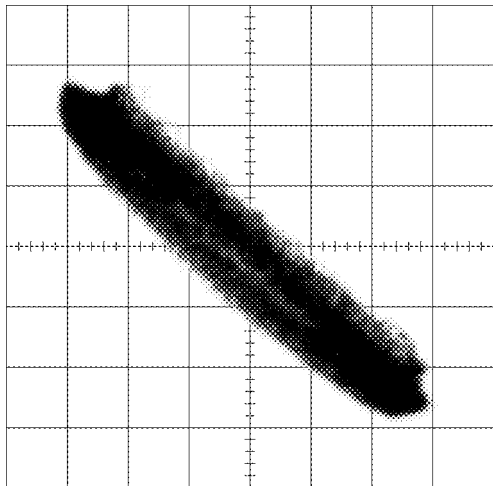
Reloading the disc changes the clamp position and may decrease the "wobble".

**A Grating waveform**

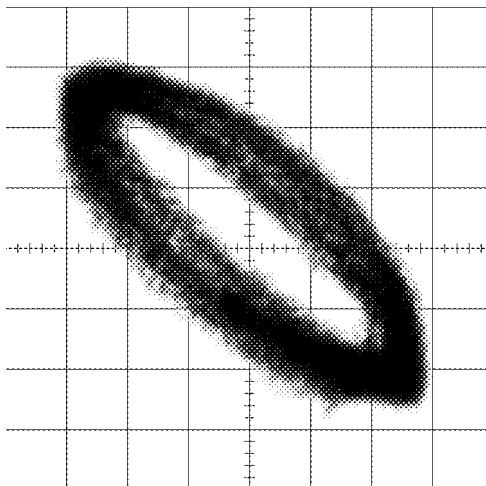
Ech → Xch 20mV/div, AC

Fch → Ych 20mV/div, AC

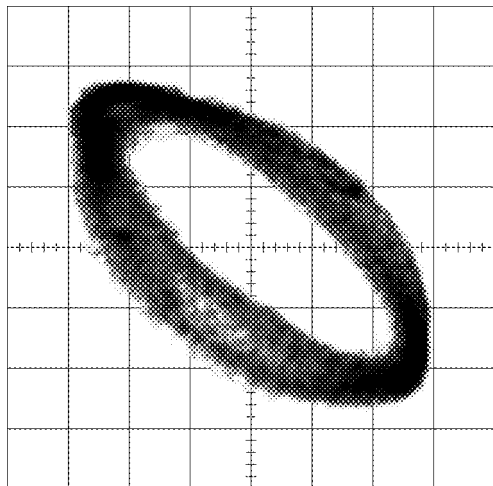
0°



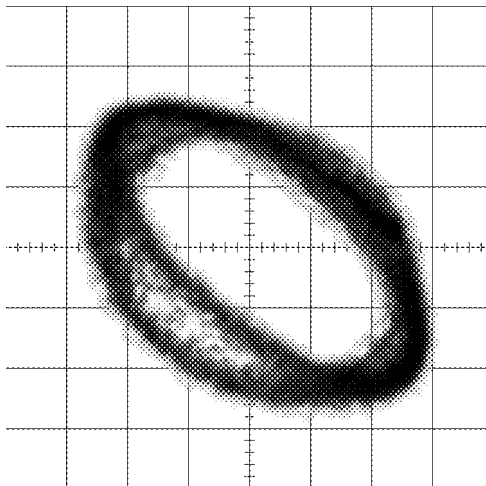
30°



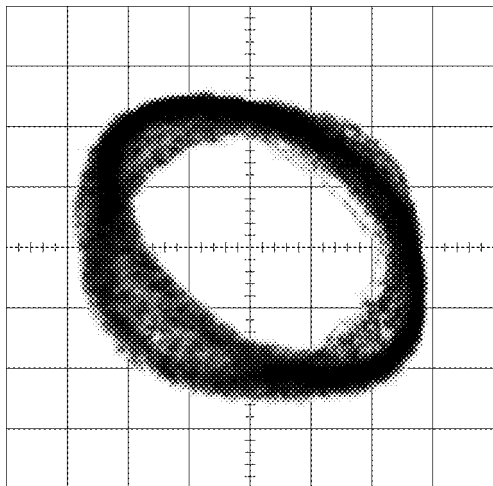
45°



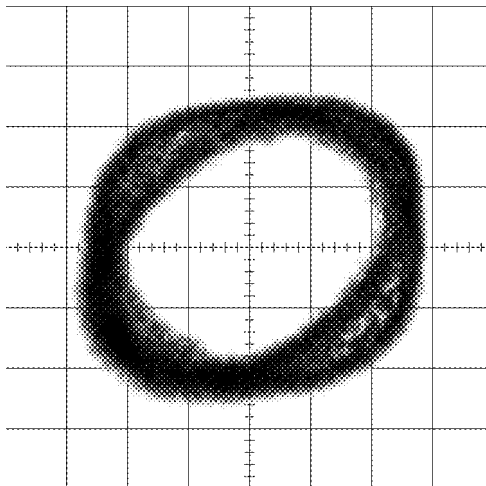
60°



75°

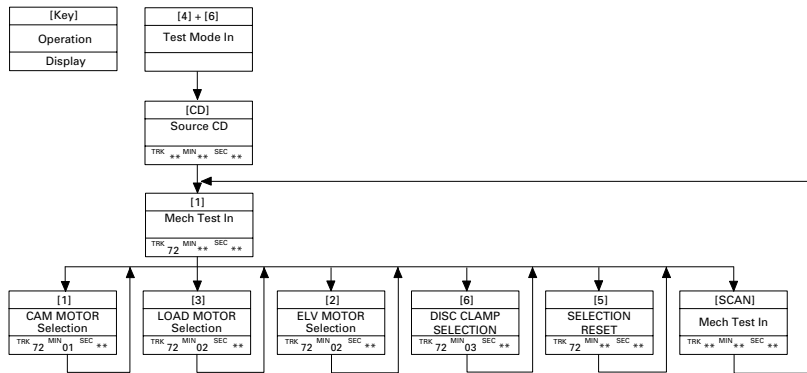


90°





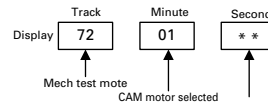
## 6.4 TEST MODE(CD)



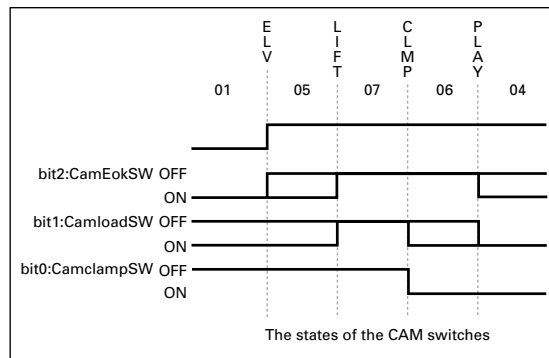
### Manual test

Select the motor you desire to move by using one of the following four keys: 1, 2, 3, and 6.

After selecting the motor, use the SEEK UP or SEEK DOWN key to move the selected motor. While the key is being pressed, the motor will keep moving.

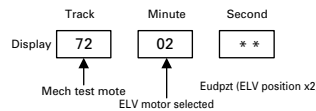


1. To select the CAM motor, press the 1 key.  
For the CAM PLAY direction, use the TUNE UP key.  
For the CAM ELV direction, use the TUNE DOWN key.



Key	Operation
SCAN	To the mech test initial state
SEEK UP	Moves the motor selected by one of the keys 1, 2, 5 and 6, in the FWD direction. The motor keeps moving while the key is pressed.
SEEK DOWN	Moves the motor selected by one of the keys 1, 2, 5 and 6, in the REV direction. The motor keeps moving while the key is pressed.
1	Selects the CAM motor.
2	Selects the ELV motor.
3	Selects the LOAD motor.
6	Selects the DISC CLAMP.
5	Selection reset.

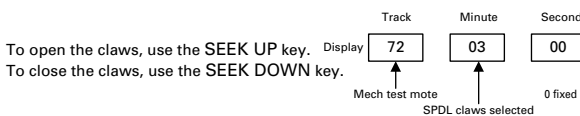
2. To select the ELV motor, press the 2 key.  
For the ELV UP direction, use the SEEK UP key.  
For the ELV DOWN direction, use the SEEK DOWN key.



3. To select the LOAD motor, press the 3 key. (Default)  
For loading, use the SEEK UP key.  
For ejection, use the SEEK DOWN key.



4. To select the SPDL claws, press the 6 key.  
Caution: SPDL claw test should be performed in the servo test mode. The SPDL claws are controlled by the servo systems and the switches conditions cannot be checked in the mechanical test mode.



### Durability test

To enter the durability test modes, press the 5 key.

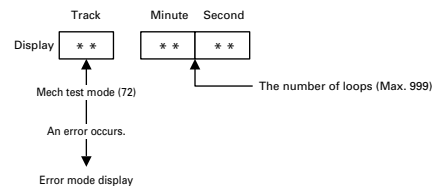
To exit from the test modes, press one of the keys 1, 2, 3, and 6.

1. LOAD durability test (Load <-> Eject)  
At the door open position (disc insertion/eject position), insert a disc and press the 5 key.

2. CAM durability test (Play <-> ELVOK)  
At any position between CAM4P and CAM5P (display: 06, 04), press the 5 key.

3. LIFT durability test (Current disc <-> Door Open)  
At any position between CAM2P and CAM3P (display: 05, 07), press the 5 key.

4. ELV durability test (ELV1F <-> 6F)  
At the CAM1P position (display: 01), press the 5 key.



## ● Electrical and servo errors

Mode	Digit	Code	Name	Descriptions
Electrical error	1,2	0xA0	VD power NG	VD power abnormal
	1,2	0xA1	Mech Vref NG	Mech elevation reference voltage abnormal
	3,4			At the occurrence of error, motor control output (*6)
Servo error	1,2	0x10	Setup carriage home NG	The CRG cannot move to inner tracks or move from inner tracks.
	1,2	0x11	Setup focus NG	No focus
	1,2	0x12	Setup spindle Lock NG /RF NG	No spindle lock. Sub codes cannot be read.
	1,2	0x17	Setup AGC NG	AGC protection does not function. Focus is easily unlocked.
	1,2	0x22	Setup Impossible to play (ROM)	No playable MP3 file or WMA file. →No MP3 file or WMA file in the set CD-ROM
	1,2	0x23	Setup file format NG	Being written in non-corresponding File Format
	1,2	0x30	SRH time-out during SRH (including TRD L.I search time-out)	Cannot reach the target address.
	1,2	0x44	Setup Impossible to play (CD-DA)	No playable TRK No. →ALL of the TRK No. in the set disc has been specified with track skip information.
	3			At the occurrence of error, claw switch value
	4			The rotation rate does not satisfy the spec.

## ● Mechanical errors

Mode	Digit	Code	Name	Descriptions
Waiting for disc pulled out	1,2	0x00		CAMRST→Forced ejection→Waiting for disc pulled out
	1,2	0x01		WTLOAD→Forced ejection→Waiting for disc pulled out
	1,2	0x02		EJCTON→Forced ejection→Waiting for disc pulled out
	1,2	0x03		SEJPCCK→Forced ejection→Waiting for disc pulled out
	1,2	0x04		HLFLOAD→Forced ejection→Waiting for disc pulled out
	1,2	0x05		DINSRDY→Forced ejection→Waiting for disc pulled out
	1,2	0x06		LIFTDN→LIFTUP→Forced ejection→Waiting for disc pulled out
	3			The m2stat value at the original error followed by forced ejection (*3)
	4			The LOAD SW value (3 bits) at the forced ejection end:
CAM Err	1,2	0x51	MFWDTO	CAM motor FWD time-out error during TRAY UP operation
	1,2	0x52	MREVTO	CAM motor REV time-out error during TRAY UP operation
	1,2	0x5a	MFWDTO	CAM motor FWD time-out error during TRAY DN operation
	1,2	0x5b	MREVTO	CAM motor REV time-out error during TRAY DN operation
	1,2	0x5e	MFWD2TO	CAM motor FWD2 time-out error during TRAY DN operation
	1,2	0x61	MFWDTO	CAM motor FWD time-out error during CRG OUT operation
	1,2	0x62	MREVTO	CAM motor REV time-out error during CRG OUT operation
	1,2	0x64	MLSWNG	LOAD SW ON stuck error during CRG OUT operation
	1,2	0x66	MREV2TO	CAM motor REV2 time-out error during CRG OUT operation
	1,2	0x6a	MFWDTO	CAM motor FWD time-out error during CRG IN operation
	1,2	0x6b	MREVTO	CAM motor REV time-out error during CRG IN operation
	1,2	0x71	MFWDTO	CAM motor FWD time-out error during ELV IN operation
	1,2	0x72	MREVTO	CAM motor REV time-out error during ELV IN operation
	1,2	0x7a	MFWDTO	CAM motor FWD time-out error during ELV OUT operation
	1,2	0x7b	MREVTO	CAM motor REV time-out error during ELV OUT operation
	1,2	0x7d	MLSWNG	LOAD SW ON stuck error during ELV OUT operation
	1,2	0x7f	MREV2TO	CAM motor REV2 time-out error during ELV OUT operation
	1,2	0x81	MFWDTO	CAM motor FWD time-out error during EIN_EXP operation
	1,2	0x82	MREVTO	CAM motor REV time-out error during EIN_EXP operation
	1,2	0x8a	MFWDTO	CAM motor FWD time-out error during CIN_EXP operation
	1,2	0x8b	MREVTO	CAM motor REV time-out error during CIN_EXP operation
	1,2	0xaa	MOVERCNT	CAM SW has not been determined during CAM operation (Chatter remains.)
	3			The OK stop position at the last elevation operation (*4)
	4			The CAM SW value (3 bits) before retry (with the first error)
CAMRST Err	1,2	0x91	MFWDTO	ELV motor FWD time-out error during CAMRST operation
	1,2	0x92	MREVTO	ELV motor REV time-out error during CAMRST operation
	1,2	0x93	MOVERCNT	Over-count error during CAMRST operation
	1,2	0x94	MSPDERR	The claws do not close during CAMRST operation.

Mode	Digit	Code	Name	Descriptions
	1,2	0x96	MREV2TO	Overrun error during CAMRST operation
	3			The CAM SW value (3 bits) before operation
	4			The ELV stop position before operation (*5)
Claw Err	1,2	0x9a	MSPDERR	The claws do not close during DSKFREE operation.
	1,2	0x9b	MSPDERR	The claws do not open during DSKLOCK operation.
	1,2	0x9c	MSPDERR	The claws do not close during CLWCLSE operation.
	1,2	0x9d	MSPDERR	The claws do not open during CLWOPEN operation.
	3			The CAM SW value (3 bits) with the claw error
	4			The CLAW SW values before and after the error stop (2 bits each)
DISCSEL Err	1,2	0xb1	MFWDTO	ELV motor FWD time-out error during DISCSEL operation
	1,2	0xb2	MREVTO	ELV motor REV time-out error during DISCSEL operation
	1,2	0xb3	MOVERCNT	Over-count error during DISCSEL operation
	1,2	0xb6	MREV2TO	Overrun error during DISCSEL DISC operation
	3			The target disc No.
	4			The ELV error stop position before retry (*5)
LIFT Err (*2)	1,2	0xc1	MFWDTO	ELV motor FWD time-out error during LIFT UP operation
	1,2	0xc2	MREVTO	ELV motor REV time-out error during LIFT UP operation
	1,2	0xc3	MOVERCNT	Over-count error during LIFT UP operation
	1,2	0xc6	MREV2TO	Overrun error during LIFT UP operation
	1,2	0xd1	MFWDTO	ELV motor FWD time-out error during LIFT DN operation
	1,2	0xd2	MREVTO	ELV motor REV time-out error during LIFT DN operation
	1,2	0xd3	MOVERCNT	Over-count error during LIFT DN operation
	1,2	0xd4	MLSWNG	DISC IN (SIDE SW ON) is sensed during door close operation.
	1,2	0xd6	MREV2TO	Overrun error during LIFT DN operation
	1,2	0xd7	MLSW2NG	"Pinched disc" is sensed during LIFT DN operation (within the range of +/-1LSB, 200ms continued)
	3			Current disc No.
	4			The ELV error stop position before retry (*5)
Insertion/ ejection err(*1)	1,2	0x90	BACKUP_NG	CAMRST→Forced ejection→Door open/close error
	1,2	0xeb	MLSWNG	LOAD SW error during HLFLOAD operation
	1,2	0xed	MLSWNG	LOAD SW error during SEJPC operation
	1,2	0xfb	MLSWNG	LOAD SW error during DINSRDY operation
	1,2	0xe0	BACKUP_NG	Backup NG during EJCTON operation
	1,2	0xe2	MREVTO	MREVTO error during EJCTON operation
	1,2	0xe6	MREV2TO	MREV2TO error during EJCTON operation
	1,2	0xf0	BACKUP_NG	Backup NG during WTLOAD operation
	1,2	0xf1	MFWDTO	MFWDTO time-out error during WTLOAD operation
	1,2	0xf2	MREVTO	SIDE SW ON with OK SW ON waiting retry during WTLOAD operation
	1,2	0xf3	MCHTERR	Incomplete insertion error during WTLOAD operation
	1,2	0xf4	MLSWNG	OK SW ON but PHOTO ON during WTLOAD operation
	1,2	0xf5	MFWD2TO	MFWD2TO time-out error during WTLOAD operation
	1,2	0xf6	MREV2TO	OK SW ON waiting retry (3 times) during WTLOAD operation
	1,2	0xf7	MLSW2NG	SIDE SW ON at the OK SW ON waiting mode during WTLOAD operation
	1,2	0xab	MOVERCNT	The LOAD SW has not been determined during insertion/loading operation (Chatter remains.)
	3			The LOAD SW value (3 bits) at the FEJCHK end
	4			The ELV stop position at the FEJCHK end (*5)
New test mode	1,2	0x40	New test mode	Focus NG after servo close
	1,2	0x41	New test mode	Lock NG after servo close
	1,2	0x42	New test mode	Sub code NG after servo close
	1,2	0x43	New test mode	Not applicable to the G2 mechanism.
	3			The claw SW value at the occurrence of error
	4			The rotation rate does not satisfy the spec.

A

Notes:

\*1) Insertion/ejection error is output only when door open/close error occurs with forced eject.

\*2) LIFT error is output under the following conditions:

LIFTDN --> TLFTUP --> forced eject --> door open/close error

\*3) The values of m2stat:

B.upNg=0, FwdTo=1, RevTo=2, Chata=3, OverCnt=4, SwNg=5, SpdNg=6,

Fwd2To=7, Rev2To=8, Sw2Ng=9

B

\*4) The last results of chatter check (compared with the target center):

+8LSB=1, +7LSB=2, +6LSB=3, +5LSB=4, +4LSB=5, +3LSB=6, +2LSB=7,

+1/0LSB=8, -1/0LSB=8, -2LSB=9, -3LSB=a, -4LSB=b, -5LSB=c, -6LSB=d, -7LSB=e, -8LSB=f,

the others=0

\*5) Basically the value of eudpzt except for the following case:

In case of eudpzt=1 and door close mode, eudpzt=e

\*6) bit0: P\_lo1, bit1: P\_lo2, bit2: P\_elv1, bit3: P\_elv2, bit4: P\_cg1, bit5: P\_cg2,

bit6: P\_elv\_vol, bit7: P\_lod\_vol

C

Claw: It's the part that looks like a claw. It's used to clamp a disc.

CAMRST: Mechanical initialization motion just after resetting

WTLOAD: Loading motion

EJCTON: Ejection motion

SEJPCK: Mechanical motion to check that there is no disc around the loading slot

HLFLOAD: Half loading

DINSRDY: Waiting for disc insertion

LIFTDN: Preparatory motion to clamp a disc after loading

LIFTUP: Preparatory motion to eject a disc

TRAYUP: CAM motor rotation to release the clamped disc from the position where the disc can be rotated

TRYDN: CAM motor rotation to reach the position where the disc can be rotated

CRGOUT: Carriage evacuating motion outside the disc to get ready for elevation motion

D

CRGIN: Carriage inserting motion inside the disc to get ready for clamping the disc

ELVIN: CAM motor rotation to reach the position where elevation motion can be carried out

ELVOUT: CAM motor rotation to reach the position where disc insertion/ejection can be carried out

EIN\_EXP: CAM motor rotation to reach the position where elevation motion can be carried out

CIN\_EXP: CAM motor rotation to reach the position where claw's opening/closing motion

DSKFREE: Claw's closing motion to release the clamped disc

DSKLOCK: Claw's opening motion to clamp a disc

CLWCLSE: Claw's closing motion

CLWOPEN: Claw's opening motion

DISCSEL: Elevation motion

FEJCHK: Mechanical motion to check that there is no disc around the loading slot

E

## 6.5 SYSTEM MICROCOMPUTER TEST PROGRAM



### ● PCL output

In the normal operation mode (the ACC switched ON, the standby mode cancelled), shift the TESTIN terminal to H.

The clock signal is output from the CLKOUT terminal (Pin 39). The frequency of the clock signal is 32.768kHz.

F

## 7. GENERAL INFORMATION

### 7.1 DIAGNOSIS

#### 7.1.1 DISASSEMBLY

##### ● Removing the Grille Assy (Fig.1)

- ➡ **1** Release the latch.
- ➡ **2** Release the latch.
- ➡ **3** Release the latch.
- ➡ **4** Release the latch.
- ➡ **5** Release the latch.
- ➡ **6** Release the latch and then remove the Grille Assy.

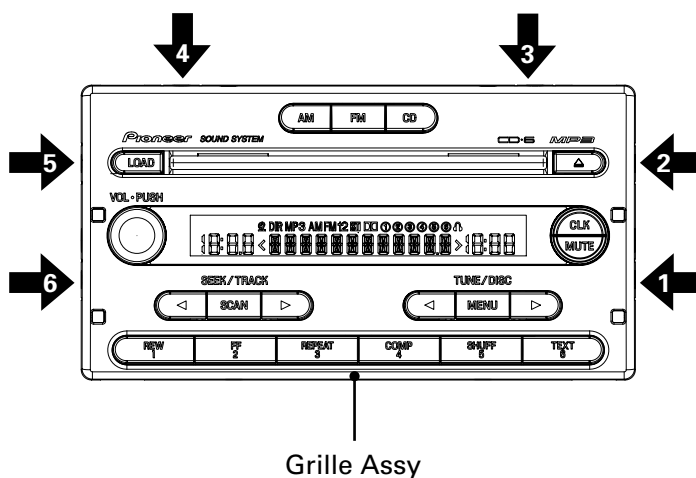


Fig.1

##### ● Removing the Frame (Fig.2)

- ➡ **1** Remove the four screws and then remove the Frame.

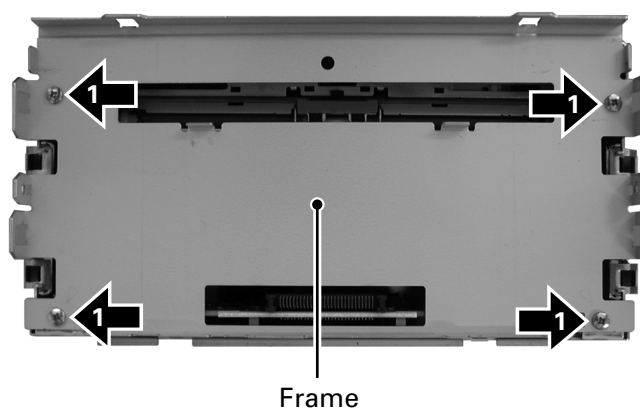


Fig.2

### ● Removing the Chassis Unit (Fig.3)

- 1** Remove the four screw.

Disconnect the connector and then remove the Chassis Unit.

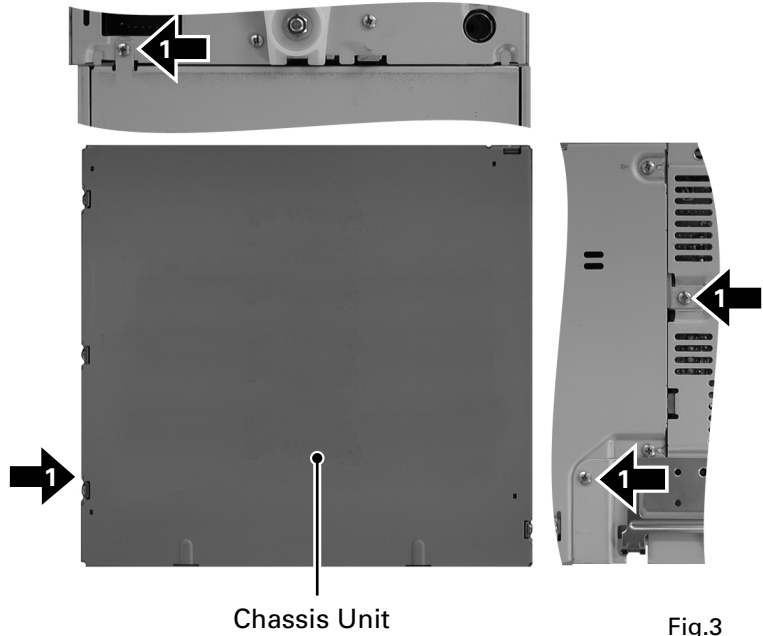


Fig.3

### ● Removing the Mother Unit (Fig.4)

- 1** Remove the three screws.
- 2** Straighten the tabs at three locations indicated.
- 3** Remove the two screws and then remove the Mother Unit.

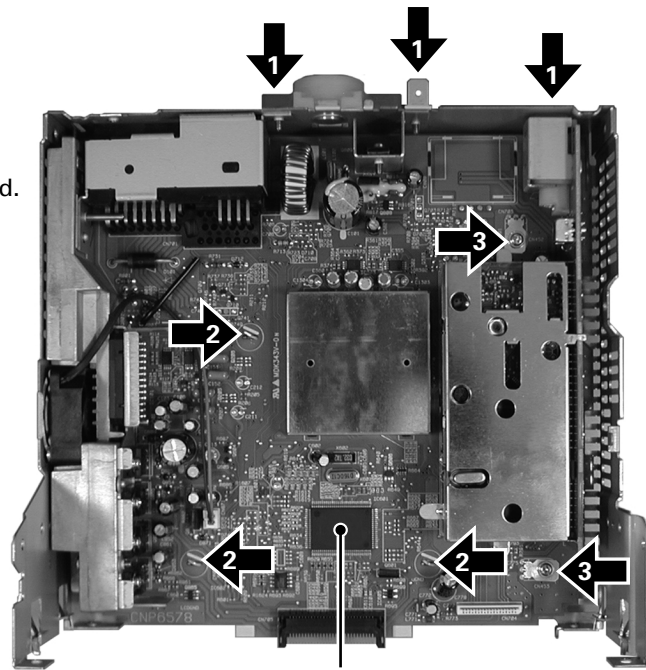


Fig.4

### ● Removing the Case(Not shown)

1. Remove the eight screws and then remove the Case.

### ● Removing the Control Unit(G2BM) (Fig.4)

1. Remove the two screws and then remove the Holder.
2. Apply shorting solder to the PU flexible cable before disconnecting it from the connector.
3. Disconnect the two connectors.
4. Remove the two screws B.
5. Remove the Control Unit(G2BM).

### ● Removing the Service Mechanism Unit(G2BM) (Fig.4)

1. Remove the two springs A and two springs B.
2. Remove the two screws C and then remove the Bracket.
3. Remove the four Dampers and then remove the Service Mechanism Unit(G2BM).

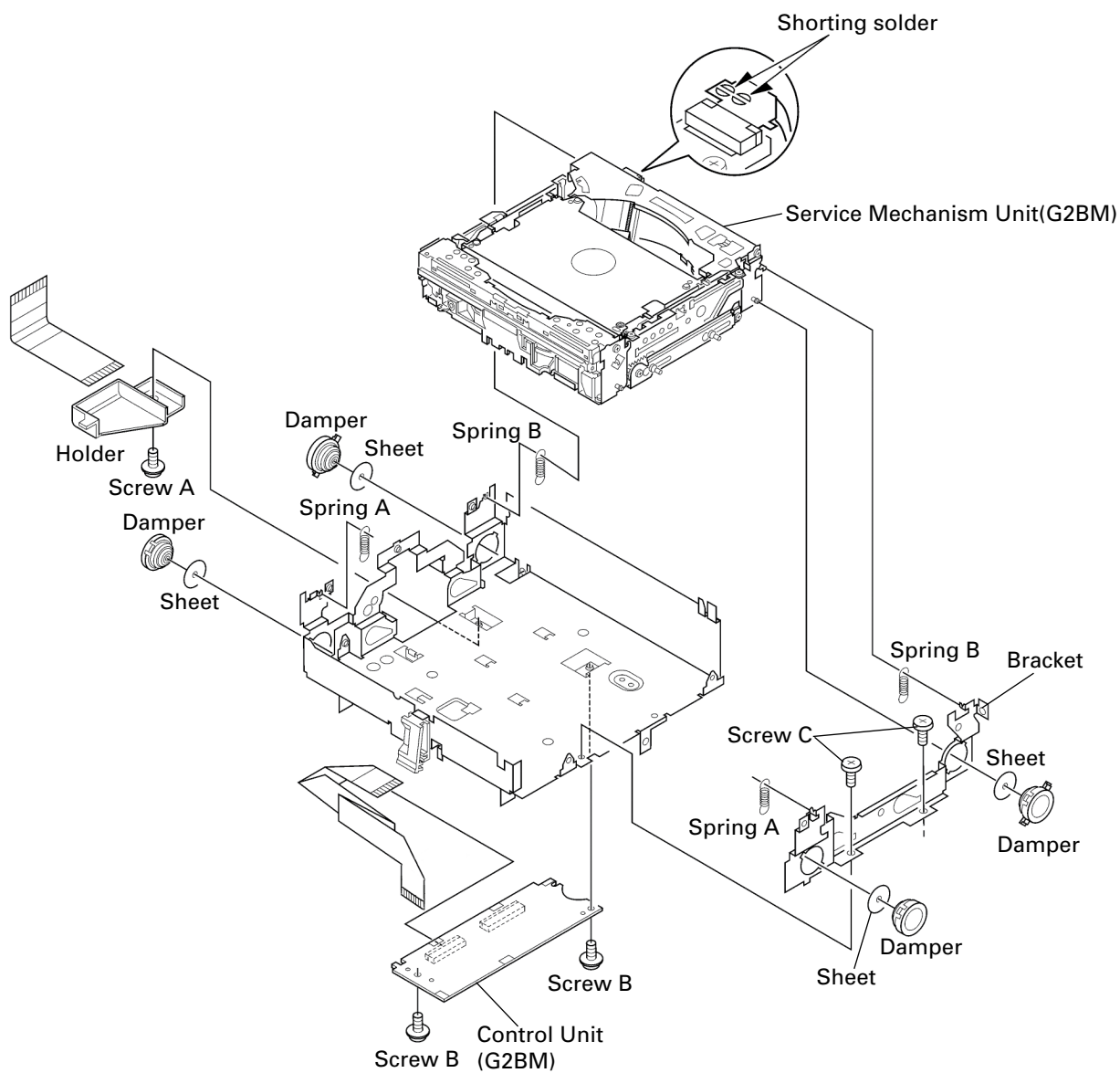


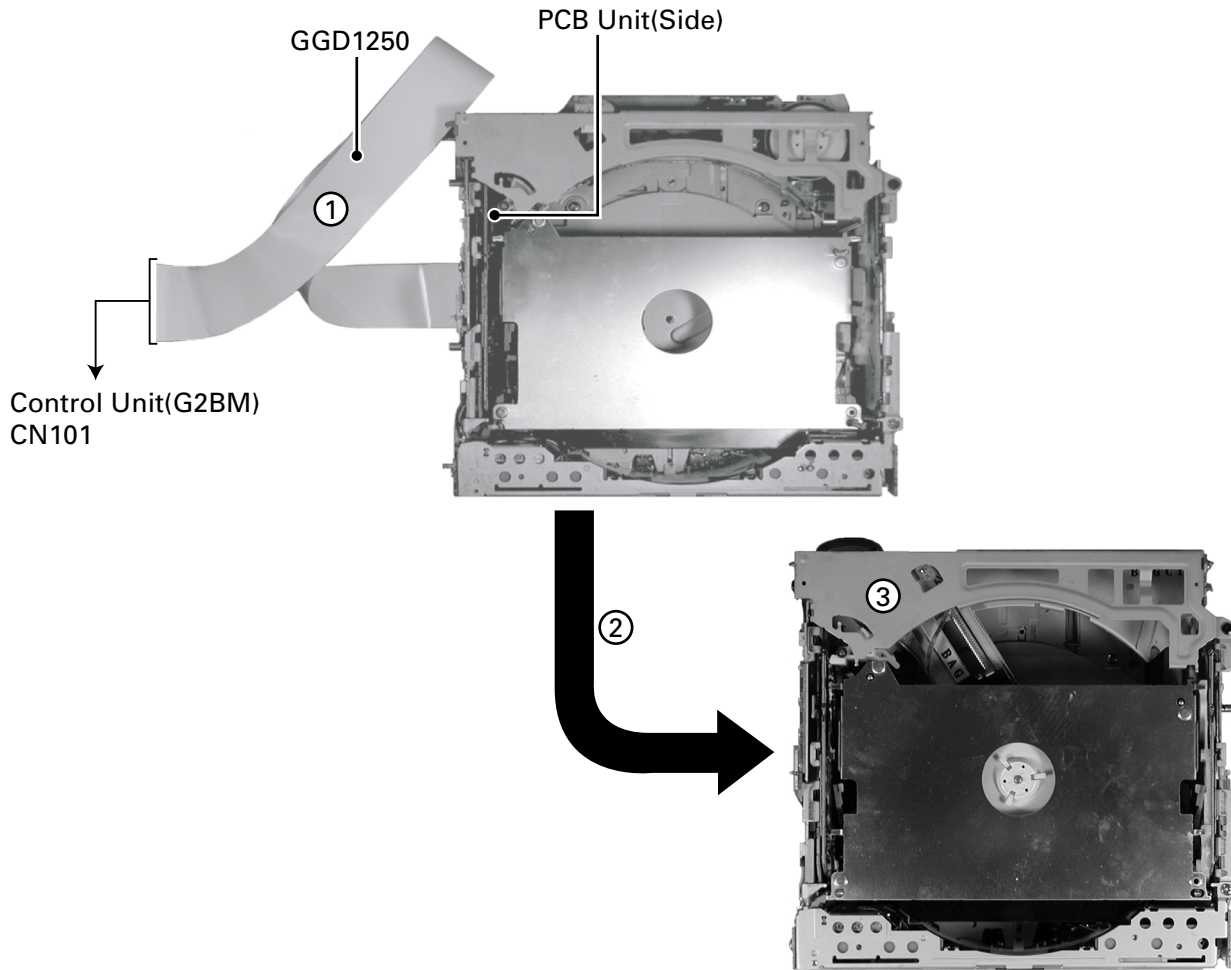
Fig.5

## ● Cautions on replacing the CD mechanism unit

The CD mechanism units available as service parts have been set in the shipment mode at the factory. Before mounting it on the product to be serviced, be sure to apply the power to a CD mechanism to put it into the initial mode, where the carriage mech assy stays at the disc clamp position, in accordance with the following method:

<Initial mode setting method>

1. Keep a CD mechanism unit out of the product to be serviced as shown below. Connect the 50-pin connector of the control unit (G2TMP3) in the product the 50-pin connector of the PCB unit (Side) in the CD and mechanism by using the extension cable (GGD1250).
2. Apply the power (+14V) to the product to move the CD mechanism until it enters the initial mode and stops. (Operating time: about 30 seconds)
3. When it is confirmed that the CD mechanism stops in the initial mode, the setting completes.



## ● Removing the PU Unit(PX1MP)

1. Set the mechanism to the shipment mode.
2. Remove the two screws A and two screws B.
3. Remove the Frame.

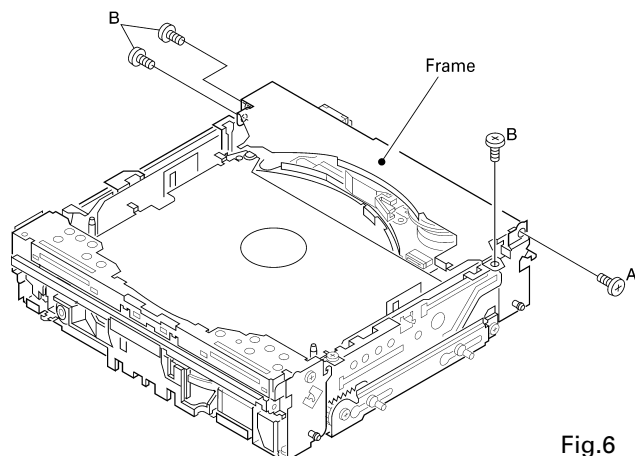


Fig.6



4. Apply shorting solder to the PU flexible cable before disconnecting it from the connector CN12.
5. Disconnect the flexible cable from the connector CN12, and remove the flexible cable Holder.
6. Remove the washer and Arm. (Be careful not to lose the spring B.)
7. Remove the screw, spring A, and Collar.
8. Remove the Carriage Mech. Assy.

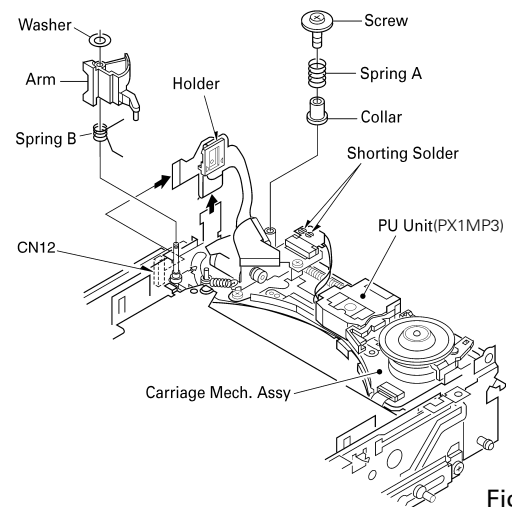


Fig.7

9. Apply shorting solder to the PU flexible cable before disconnecting it from the Connector.
10. Disconnect the PU flexible cable from the Connector.
11. Move the PU Unit(PX1MP) to the left side slightly by turning the Gear.
12. Pull out the spindle motor Support Wheel Unit upwards to remove it.
13. Remove the Spring.
14. Slide the holder to make it easier to remove the Screw Unit.

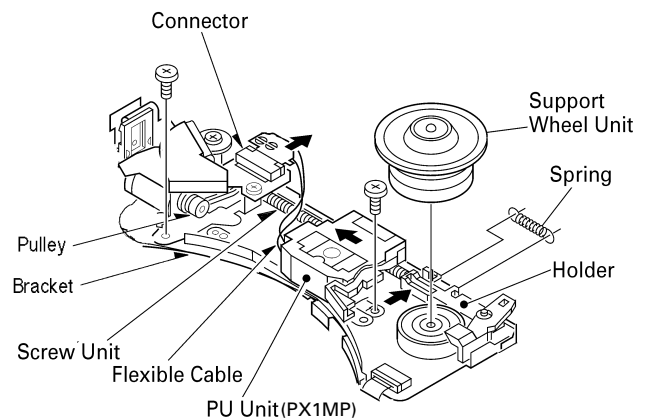


Fig.8

15. While pressing the shaft holder in the direction shown by the black arrow in the right figure, remove the PU Unit(PX1MP) together with the Screw Unit.

**Note:**

To assemble the PU Unit(PX1MP), insert the Spring on the PU rear between the PU Unit(PX1MP) and the Guide first.

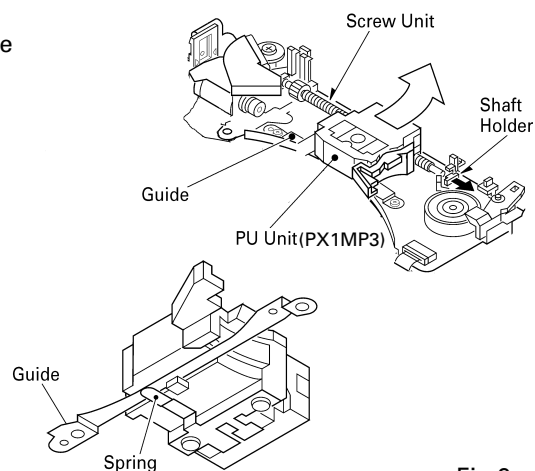
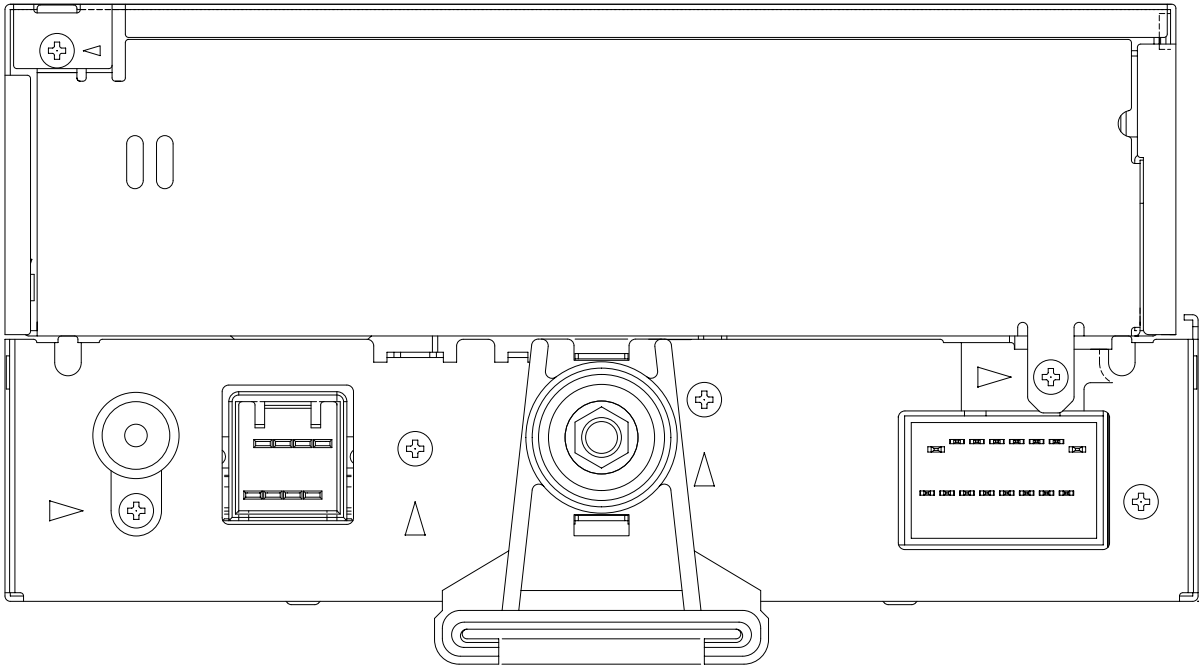
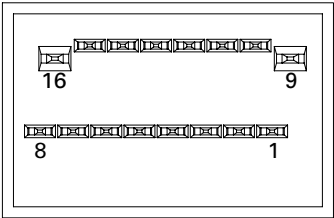
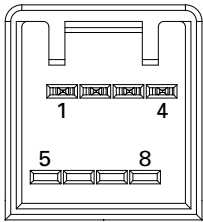
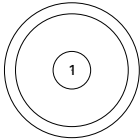


Fig.9

7.1.2 CONNECTOR FUNCTION DESCRIPTION



DEH-MG2037ZF/XU/UC



FM/AM ANTENNA	
1	ANTENNA IN
CASE	RF GND

SUB WOOFER	
1	SW-
2	SW+
3	SW SHIELD
4	SW E/CLD
5	NC
6	NC
7	NC
8	NC

POWER SUPPLY,SPEAKER	
1	ILL+
2	ILL-
3	START
4	CLOCK
5	RR+
6	RR-
7	FR+
8	FR-
9	B.UP
10	RUN/ACC
11	RADIO GND
12	RL+
13	RL-
14	FL+
15	FL-
16	POWER AMP GND

## 7.2 PARTS

### 7.2.1 IC

PD5754A

PM2010A

S-80843CNUA-B84

PDH053C

PDH054C

UPD63760GJ

BA6849FS

BD7962FM

MSM51V18165FP-60TS

PE5335B

LC75813E

#### ● Pin Functions (PD5754A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	PDO	O	C	Tuner : PLL data output
2	PCK	O	C	Tuner : PLL serial clock output
3	BLPWR	O		LCD back light power output
4	ILMOUT	O		Illumination D/A output
5	LCDDT	O	C	LCD driver : Data output
6	PWMIN	I		Illumination PWM input
7	LCDCLK	O	C	LCD driver : Clock output
8	BYTE			GND
9	CNVSS			GND
10	SCLKIN	I		Sub clock input
11	SCLKOUT	O		Sub clock output
12	RESET	I		Reset input
13	XOUT	O		Crystal oscillating element connection pin
14	VSS			GND
15	XIN	I		Crystal oscillating element connection pin
16	VDD			Power supply terminal
17	NMI	I		Not used(Connect to VDD)
18	RSPSW	O	C	Rear speaker switch output (Not used)
19	ILMINT	I		Illumination interrupt input
20	ROTINT	I		Rotary encoder interrupt input
21	ASENS	I		ACC power sense input
22	RPAIN	I		Reverse parking aid input (Not used)
23	SWCLPIN	I		Sub woofer clip detector input
24	CLPIN	I		Clip detector input
25	SPEED	I		SPEED pulse input (Not used)
26	MUTE	O	C	System mute output
27	BSENS	I		Back up power sense input
28	BSCK	O	C	P-BUS : Serial clock output
29	BSI	I		P-BUS : Serial data input
30	BSO	O	N	P-BUS : Serial data output
31	ATXD	O	C	ACP-BUS : ACP data output (Not used)
32	ARXD	I		ACP-BUS : ACP data input (Not used)
33	FMUTE	O	C	Front mute output (Not used)
34	RMUTE	O	C	Rear mute output (Not used)
35	IFDO	O	C	DSP : Interface Data output
36	IFDI	I		DSP : Interface Data input
37	IFCLK	O	C	DSP : Interface clock output
38	SWPWR	O	C	Sub woofer power output
39	CLKOUT	O	C	Sub clock adjustment output
40	CLKSENS	O	C	Clock defeat output(H : Clock L : None) (Not used)
41-43	NC			Not used
44	CDPWR	O	C	CD power output
45	EPCE	O	C	Diagnosis EEPROM : Chip enable output
46	ROMCS	O	C	ROM correction chip select output
47	ROMCK	O	C	Diagnosis EEPROM : Clock output
48	ROMDATA	I/O	/C	Diagnosis EEPROM : Data input / output
49	FANPWR	O	C	Cooling fan power output
50-54	KDT4-KDT0	I		Key data input 4-0
55	NC			Not used
56	TESTIN	I		Test program mode input
57-61	KST5-KST1	O	N	Key strobe output 5-1
62	VDD			Power supply terminal

A

Pin No.	Pin Name	I/O	Format	Function and Operation
63	KST0	O	N	Key strobe output 0
64	VSS			GND
65	ROTIN0	I		Rotary encoder pulse input 0
66	ROTIN1	I		Rotary encoder pulse input 1
67	LCDCE	O	C	LCD driver : Chip enable output
68	LCDINH	O	C	LCD driver : Inhibit output
69	SWVDD	O	C	LCD driver : Power supply control output
70	SYSPWR	O	C	System power output
71	MODEL	I		Model select input
72	NC			Not used
73	WAKEUP	I		Wake up key sense input
74	PTAIN	I		PTA interrupt input (Not used)
75	ATPINT	O		ACP-BUS : ACP interrupter output (Not used)
76	NC			Not used
77	EVST	O	C	Electronic volume : Strobe output (Not used)
78	BRXEN	I/O	/C	P-BUS : Communication enable input / output
79	BSRQ	I		P-BUS : Request input
80	BRST	I		P-BUS : Reset input
81	ST	I		Tuner : Stereo input
82	SD	I		Tuner : PLL station detector input
83	PLLCE2	O	C	Tuner : PLL chip enable output 2
84	PLLCE	O	C	Tuner : PLL chip enable output
85	LOCL	O	C	Tuner : Local low output
86	ASYSON	O	C	ACP-BUS : ACP power output (Not used)
87	ANTPWR	O	C	Tuner : Antenna power output (Not used)
88	DSPRST	O	C	DSP : IC reset output
89	ERR	I		DSP : Interface error input
90	IFOK	I		DSP : Interface monitor port input
91	ACK	I		DSP : Interface acknowledge input
92	IFCS	O	C	DSP : Interface chip select output
93	TEMP	I		CD : Temperature detection input
94	SWCIN	O		SWC input
95	ILMI	I		Illumination sense input
96	AVSS			GND
97	SL	I		Tuner : SD level input
98	VREF			A/D converter reference voltage terminal
99	AVDD			Power supply terminal
100	PDI	I		Tuner : PLL data input

B

C

D

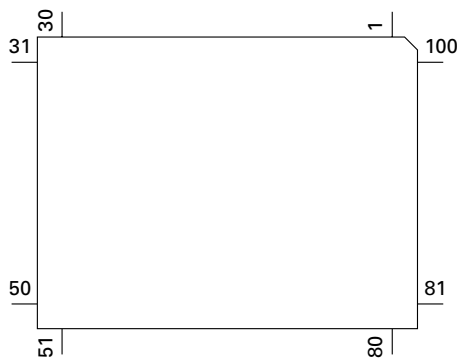
E

F

\* PD5754A

IC's marked by \* are MOS type.

Be careful in handling them because they are very liable to be damaged by electrostatic induction.



Format	Meaning
C	C MOS
N	N channel open drain

# **Pin Function (PM2010A)**

Pin No.	Pin Name	I/O	Function and Operation
1	XI	I	Crystal oscillator connection or clock input
2	XO	O	Crystal oscillator connection
3	VDX		Crystal oscillator power supply
4	GND A1		DAC1GND
5	AOUT1	O	DAC1 volume output
6	DACO1	O	DAC1 output
7	VLI1	I	DAC1 volume input
8	VDD12		DAC1, DAC2 power supply
9	VLI2	I	DAC2 volume input
10	DACO2	O	DAC2 output
11	AOUT2	O	DAC2 volume output
12, 13	GND A2, 3		DAC2, 3GND
14	AOUT3	O	DAC3 volume output
15	DACO3	O	DAC3 output
16	VLI3	I	DAC3 volume input
17	VREF		DAC operation amp reference potential connection pin
18	VDD34		DAC3, DAC4 power supply
19	VLI4	I	DAC4 volume input
20	DACO4	O	DAC4 output
21	AOUT4	O	DAC4 volume output
22, 23	GND A4, 5		DAC4, 5GND
24	AOUT5	O	DAC5 volume output
25	DACO5	O	DAC5 output
26	VLI5	I	DAC5 volume input
27	VDD56		DAC5, DAC6 power supply
28	VLI6	I	DAC6 volume input
29	DACO6	O	DAC6 output
30	AOUT6	O	DAC6 volume output
31	GND A6		DAC6GND
32	GND		Digital section GND
33-36	TEST0-3	I	Test setting 0-3
37	VDD		Digital section VDD
38-41	TP0-3	O	Test port 0-3
42	CKI0	I	DAC clock input 0
43	TP4	O	Test port 4
44	CKI1	I	DAC clock input 1
45	TP5	O	Test port 5
46	CKO0	O	General-purpose clock output 0
47	TP6	O	Test port 6
48	CKO1	O	General-purpose clock output 1
49	VDD		Digital section VDD
50	CKO2	O	Clock output 2
51, 52	ELRO0, 1	I	LRCK input for DOUT0, 1
53, 54	EBCO0, 1	I	BCK input for DOUT0, 1
55, 56	DOUT0, 1	O	Digital serial output 0, 1
57	GND		Digital section GND
58-60	DINO-2	I	Digital serial input 0-2
61, 62	EBCI0, 1	I	BCK input for DIN0, 1
63, 64	ELRI0, 1	I	LRCK input for DIN0, 1
65	GND		Digital section GND
66	I2CS	I	Microcomputer I/F I2C select
67	$\overline{CS}$	I	Microcomputer I/F chip select
68	IFCK	I	Microcomputer I/F communication clock input
69	IFDI	I	Microcomputer I/F data input
70	IFDO	O	Microcomputer I/F data output
71	ACK	O	Microcomputer I/F acknowledge output
72	IFOK	O	Microcomputer I/F condition monitor output
73	$\overline{ERR}$	O	Overrun monitor output
74	BT	I	Boot setting

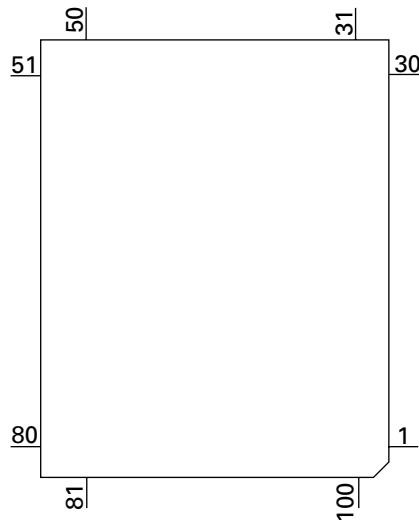
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Pin No.	Pin Name	I/O	Function and Operation
75	RST	I	Reset
76	VDD		Digital section VDD
77	VDAM		ADC microphone input power supply
78	VARM		ADC microphone input operation amp reference potential
79	MIN	I	ADC microphone input
80	GNDM		ADC microphone input GND
81-86	LIN-1-6	I	ADC Lch input 1-6
87-92	RIN-1-6	I	ADC Rch input 1-6
93	GNDAL		ADC Lch input GND
94	OUTL	O	ADC Lch selector output
95	VRAL		ADC Lch operation amp reference potential
96	VDA		ADC input power supply
97	VRAR		ADC Rch operation amp reference potential
98	OUTR	O	ADC Rch selector output
99	GNDAR		ADC Rch input GND
100	GNDX		Crystal oscillator section GND

B

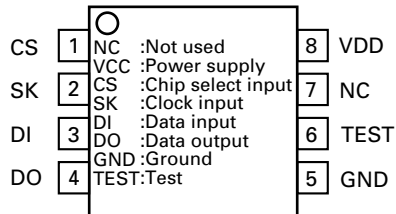
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\* PM2010A



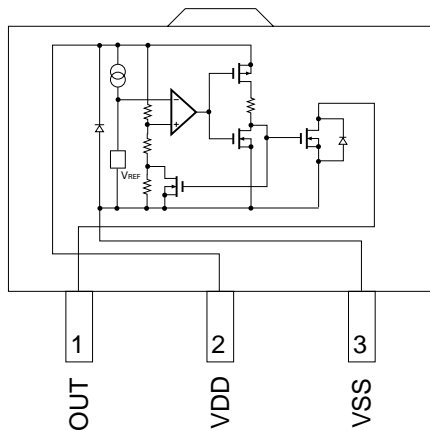
\* PDH053C(DEH-MG2037ZF/XU/UC)

\* PDH054C(DEH-MG2137ZF/XU/UC)



D

\* S-80843CNUA-B84



E

F

# **Pin Functions (UPD63760GJ)**

Pin No.	Pin Name	I/O	Function and Operation
1	R.GND		GND for DRAM I/F
2	RST	I	Input of reset
3-7	AB12-8	I	Address bus 12-8 from the microcomputer
8-15	AD7-0	I/O	Address/data bus 7-0 to the microcomputer
16	CS	I	Chip selection
17	ASTB	I	Address strobe
18	READ	I	Control signals (read)
19	WRITE	I	Control signals (write)
20	WAIT	O	Control signals (wait)
21	INTQ		Interruption signals to the external microcomputer
22	IFMODE	I	Switching between the data buses (16bit/8bit)
23	D.VDD		Power supply for digital circuits
24	XTALEN1	I	Permission to oscillate 16.9344MHz
25	XTALEN2	I	Permission to oscillate 24.576MHz
26	DA.VDD		Power supply for DAC
27	ROUT	O	Output of audio for the right channel
28	DA.GND		GND for DAC
29	R+	O	Output of the right channel audio PWM
30	R-	O	Output of the right channel audio PWM
31	REGC		Connected to the capacitor for band gap
32	L-	O	Output of the left channel audio PWM
33	L+	O	Output of the left channel audio PWM
34	DA.GND		GND for DAC
35	LOUT	O	Output of audio for the left channel
36	DA.VDD		Power supply for DAC
37	X.VDD		Power supply for the crystal oscillator
38	XTAL1		Connected to the crystal oscillator (16.9344MHz)
39	XTAL1		Connected to the crystal oscillator (16.9344MHz)
40, 41	X.GND		Ground for the crystal oscillator
42	XTAL2		Connected to the crystal oscillator (24.576MHz)
43	XTAL2		Connected to the crystal oscillator (24.576MHz)
44	X.VDD		Power supply for the crystal oscillator
45	D.GND		GND for digital circuits
46	DIN	I	Input of audio data
47	DOUT	O	Output of audio data
48	SCKIN	I	Clock input for audio data
49	SCKO	O	Clock output for audio data
50	LRCKIN	I	Input of LRCK for audio data
51	LRCK	O	Output LRCK for audio data
52	TESTX	O	Output for tests
53	RFOK	O	Output of RFOK
54	C16M	O	Output of 16.9344MHz
55	TESTEN	I	Connected to GND
56	TEST4	I	Connected to GND
57	D.VDD		Power supply for digital circuits
58	RFCK/HOLD	O	Output of RFCK/HOLD signal
59	WFCK/MIRR	O	Output of WFCK/MIRR signal
60	PLCK	O	Output of PLCK
61	LOCK	O	Output of LOCK
62	C1D1	O	Information on error correction
63	C1D2	O	Information on error correction
64	C2D1(RMUTE)	O	Information on error correction (mute for Rch)
65	C2D2(LMUTE)	O	Information on error correction (mute for Lch)
66	C2D3	O	Information on error correction
67	D.GND		Ground for digital circuits
68	RAS	O	Output of DRAM RAS
69	CAS0	O	Output of DRAM Lower CAS
70	CAS1	O	Output of DRAM Upper CAS
71	WE	O	Output of DRAM WE
72	OE	O	Output of DRAM OE

A

Pin No.	Pin Name	I/O	Function and Operation
73-88	RDB0-15	I/O	Input/output of DRAM Data0-15
89	D.GND		Ground for digital circuits
90-99	RA0-9	O	Output of DRAM Address0-9
100	D.VDD		Power supply for digital circuits
101-104	TEST0-3	I	Connected to GND
105	FD	O	Output of focus drive PWM
106	TD	O	Output of tracking drive PWM
107	SD	O	Output of thread drive PWM
108	MD	O	Output of spindle drive PWM
109	A.VDD		Power supply for the analog system
110	ATEST	O	Analog tests
111	EFM	O	Output of EFM signals
112	ASY	I	Input of asymmetry
113	C3T		Connection to the capacitor for detecting 3T
114	A.GND		Ground for the analog system
115	RFI	I	Input of RF
116	AGCO	O	Output of RF
117	AGCI	I	Input of AGC
118	RFO	O	Output of RF(AGC)
119, 120	EQ2, 1		Equalizer 2, 1
121	RF2-	I	Reversal input of RF2
122	RF-	I	Reversal input of RF
123	A.GND		Ground for the analog system
124	A	I	Input of A
125	C	I	Input of C
126	B	I	Input of B
127	D	I	Input of D
128	F	I	Input of F
129	E	I	Input of E
130	A.VDD		Power supply for the analog system
131	REFOUT	O	Output of reference voltage
132	REFC		Connected to the capacitor for output of REFOUT
133	FE-	I	Reversal input of FE
134	FEO	O	Output of FE
135	TE-	I	Reversal input of TE
136	TEO	O	Output of TE
137	TE2	O	TE2
138	TEC	I	TEC
139	A.GND		Ground for the analog system
140	LDREGO	O	Output of REG voltage for APC
141	PD	I	Input of PD
142	LD	O	Output of LD
143	PN	I	Assignment of pickup polarity
144	A.VDD		Power supply for the analog system

B

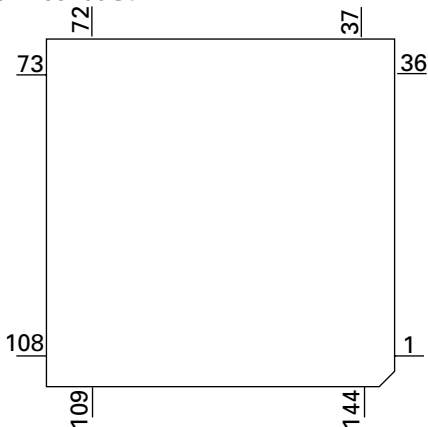
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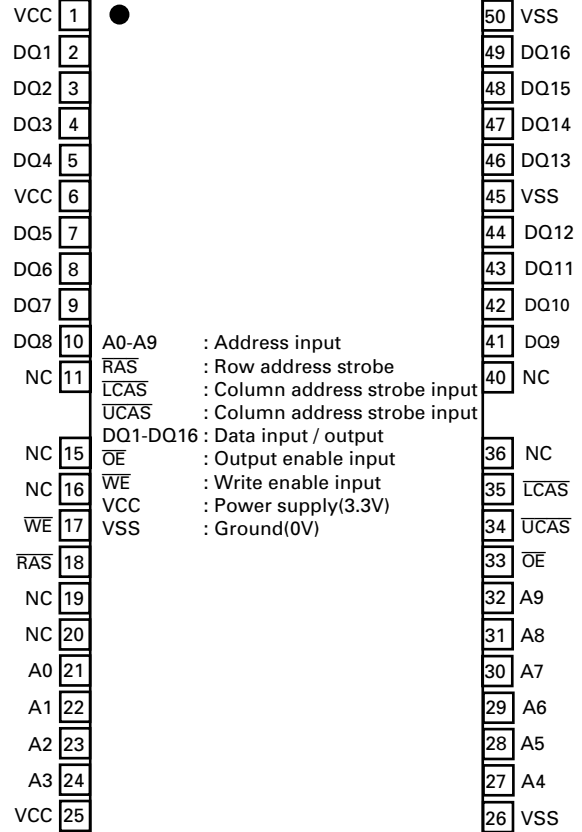
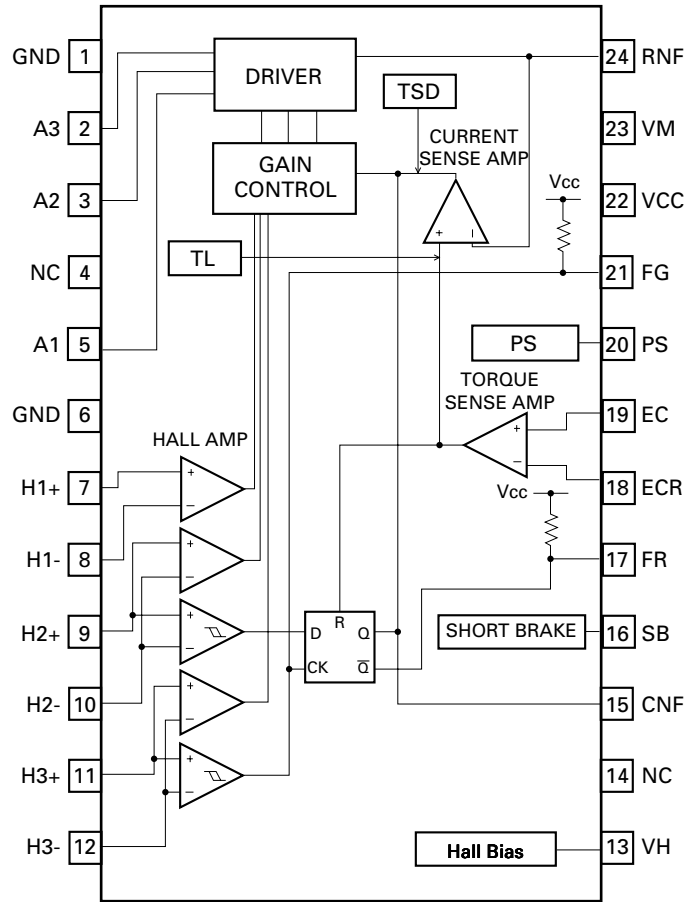
\* UPD63760GJ



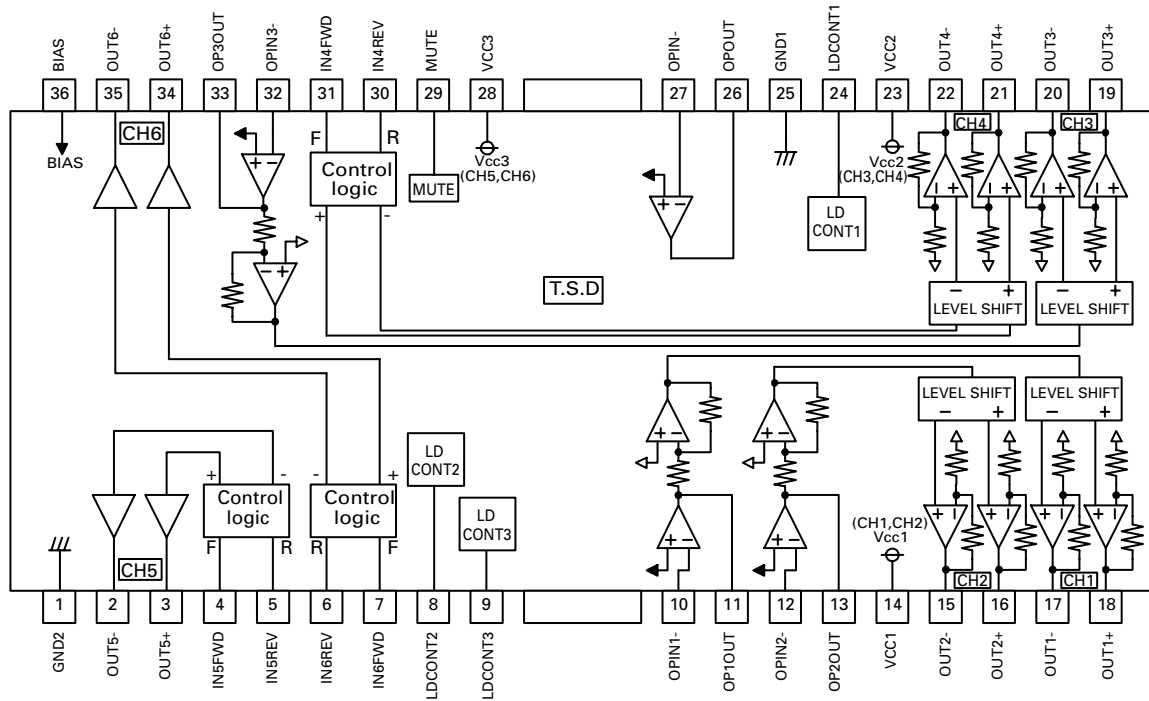


BA6849FS

\* MSM51V18165FP-60TS



BD7962FM

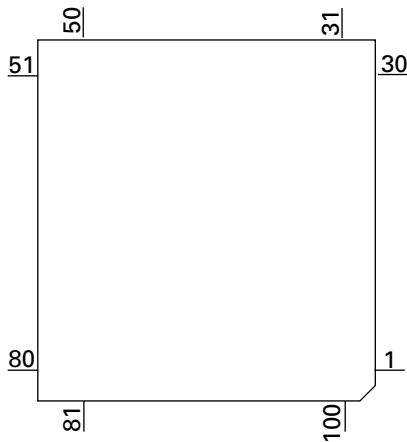


# **Pin Functions (PE5335B)**

Pin No.	Pin Name	I/O	Format	Function and Operation
1	FTXD	O	C	For flash rewriting (transmitted signal)
2	BUFEMP	O	C	Not used
3	BSI	I		P-Bus serial data input
4	BSO	O	C	P-Bus serial data output
5	BSCK	I/O	/C	P-Bus serial clock input/output
6	CAMEOK	I		CAM operation sense 1
7	CAMLOAD	I		CAM operation sense 2
8	CAMCLMP	I		CAM operation sense 3
9	EVDD			E power supply Positive power supply
10	EVSS			E power supply GND
11	LO2	O	C	LOAD motor control output 2 (FWD)
12	LO1	O	C	LOAD motor control output 1 (REV)
13	ELV2	O	C	ELV motor control output 2 (FWD)
14	ELV1	O	C	ELV motor control output 1 (REV)
15	FG	I		SPDL FG pulse input
16	CLAMP	I		DISC clamp detect input
17	EMPH	O	C	Not used
18	DSPMUTE	O	C	Not used
19	DRAMSEL	I		DRAM 4M(L), 16M(H) select input
20	ADENA	O	C	A/D reference voltage supply control output
21	IC/VPP			IC : VSS direct connection/VPP : Pull-down
22	BRXEN	I/O	/C	P-Bus reception is possible
23	BSRQ	I/O	/C	P-Bus service request demand
24	XTALEN1	O	C	CD LSI 16.9344MHz oscillation permission output
25	XTALEN2	O	C	CD LSI 24.576MHz oscillation permission output
26	XRST	O	C	CD LSI reset control output
27	VDCONT	O	C	VD power supply control output
28	CD3VON	O	C	CD +3.3V power supply control output
29	CONT	O	C	Servo driver power supply control output
30	XWAIT	I		CD LSI wait control signal input
31	CG1	O	C	CAM motor control output 1 (REV)
32	CG2	O	C	CAM motor control output 2 (FWD)
33	CDMUTE	O	C	CD mute control output
34	RESET	I		System reset input
35	XT1	I		Connected to the oscillator for subclock (connected to VSS via the resistor)
36	XT2			Connected to the oscillator for subclock (Open)
37	REGC			Connected to the capacity stabilizing output of the regulator (an electrolytic capacitor of about 1μF)
38	X2			Oscillator connection for mainclock
39	X1	I		Oscillator connection for mainclock
40	VSS			GND
41	VDD			Positive power supply (5V)
42	CLKOUT	O	C	Internal system clock output (Open)
43	XWRITE	O		CD LSI write control signal output
44	UBEN	O		Not used (Open)
45	WR/W	O		Not used
46	XREAD	O		CD LSI read control signal output
47	XASTB	O		CD LSI address strobe output
48	LOCK	I		Spindle lock input
49	NC	O	C	Not used
50-57	AD0-7	I/O	/C	Address/Data bus 0-7
58	BVDD			B power supply Positive power supply (3.3V)
59	BVSS			B power supply GND
60-67	AD8-15	I/O	/C	Address/Data bus 8-15
68	XCS	O	C	Not used
69	WCS	O	C	Not used
70	NC			Not used
71	NC			Not used
72	XCS	O	C	CD LSI chip select output

Pin No.	Pin Name	I/O	Format	Function and Operation
73	NC	O	C	Not used
74	AVDD			A power supply Positive power supply (5V)
75	AVSS			A power supply GND
76	AVREF			The reference voltage input for A/D converter
77	VDSENS			VD power supply short sense input
78	EREF			ELV sense reference voltage
79	TEMP			Temperature information sense input
80	HOME	I		Home SW sense input
81	LOAVOL2	I		Connected to AVDD or AVSS via the resistor
82	FOK	I		RFOK input chatter count input
83	A/D			Connected to AVDD or AVSS via the resistor
84	LOADPHT			LOAD operation sense input
85	ELVSNS			ELV position select input
86	NC	I		Connected to AVDD or AVSS via the resistor
87	NC	I		Connected to AVDD or AVSS via the resistor
88	TESTIN	I		Chip check test program starting input
89	NC			Connected to EVDD or EVSS via the resistor
90	XINT			CD LSI interruption signal input
91	NC			Connected to EVDD or EVSS via the resistor
92	BRST	I		P-Bus reset input
93	LOADSW1	I		Loading detect switch 1
94	LOADSW2			Loading detect switch 2
95	ELV_VOL	O	C	ELV drive voltage select output
96	LOD_VOL	O	C	LOD drive voltage select output
97	SIO	I/O	/C	E2PROM data input/output
98	SOO	O	C	E2PROM chip selection output
99	SCKO	O	C	E2PROM clock output
100	FRXD	I		For flash rewriting (received signal)

\* PE5335B



Format	Meaning
C	CMOS

A

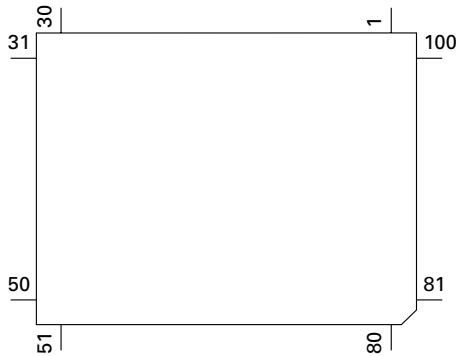
● Pin Functions (LC75813E)

Pin No.	Pin Name	I/O	Function and Operation
1	CL	I	Clock input
2	DI	I	Data input
3-89	S1-S87	O	Segment output
90-92	COM3-COM1	O	Common output
93	VDD		Logic section power supply terminal
94	VLCD		LCD driver section power supply terminal
95	VLCD1		2/3 VLCD terminal
96	VLCD2		1/3 VLCD terminal
97	VSS		GND
98	OSC		Oscillating element connection terminal
99	INH	I	LCD driver inhibit input
100	CE	I	LCD driver chip enable input

B

\* LC75813E

C

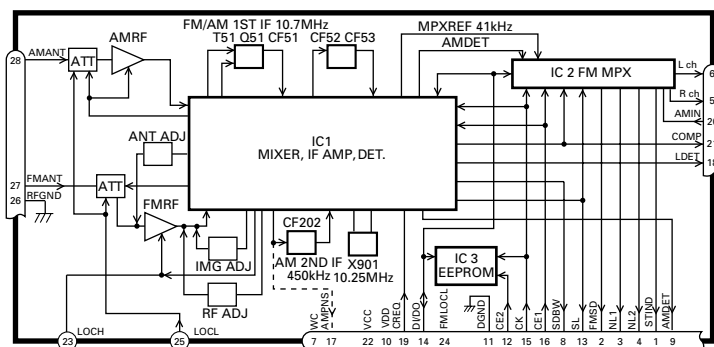


D

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F

## ● FM/AM Tuner Unit

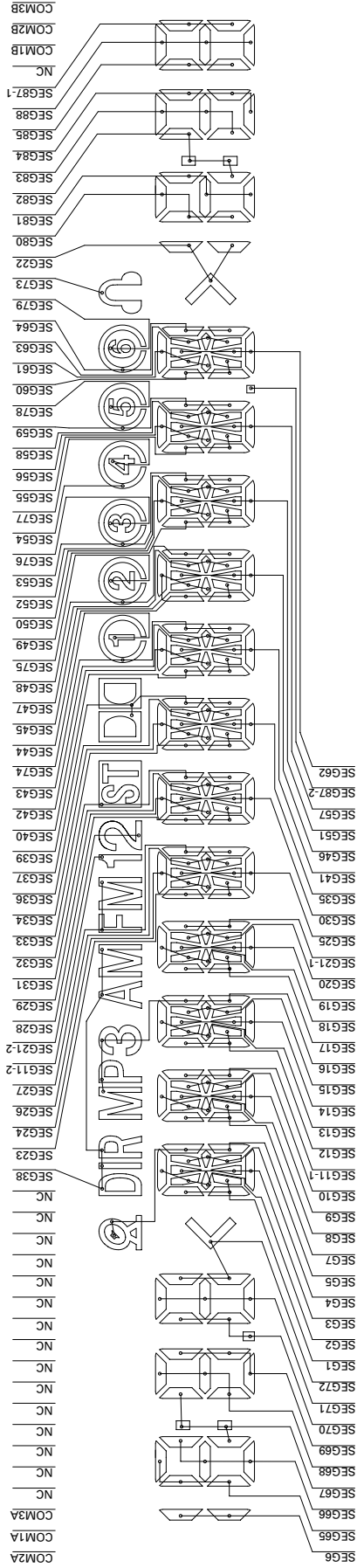


No.	Symbol	I/O	Explain	
1	STIND	O	stereo indicator	"Low" when the FM stereo signals are received. To be pulled up to the "VDD" at 47kΩ.
2	FMSD	O	FM station detector	"High" when signals are received. To be pulled up to the "VDD" at 47kΩ Meanwhile, 10kΩ should be used when taking diver FIX trigger from here and "High: 0.9VDD or more" and "Low: 250mV or less". (Should satisfy the diver IC specifications)
3	NL1	O	noise level-1	"High" when noise is received. Output for the RDS. GND at 47kΩ//1,800pF.
4	NL2	O	noise level-2	"High" when noise is received. Output for the RDS. GND at 36kΩ//330pF.
5	Rch	O	R channel output	FM stereo "R-ch" signal output or AM audio output. Add the specified de-emphasis constant.
6	Lch	O	L channel output	FM stereo "L-ch" signal output or AM audio output. Add the specified de-emphasis constant.
7	WC		write control	EEPROM write control. Writing permissible at "Low". Normally open.
8	SDBW	O	SD bandwidth	SD bandwidth signal output. For detection of detuning data for the RDS.
9	AMDET	O	AM detector output	AM detector output. r out < 100Ω
10	VDD		power supply	Power supply pin for the digital section. DC 5V +/- 0.25V. Be careful about overlapping noise in the logic section.
11	DGND		digital ground	Grounding for the digital section.
12	CE2	I	chip enable-2	EEPROM chip enable. Active a "Low" To be pulled up to the "VDD" at 47kΩ
13	SL	I/O	signal level	Received FM/AM signal level (strength) output. Connect the specified load resistor and capacitor (10k Ω+ 39k Ω//4,700pF)
14	DI/DO	I/O	data input/ data output	Data input/Data output To be pulled up to the "VDD" at 47kΩ
15	CK	I	clock	Clock input To be pulled up to the "VDD" at 47kΩ
16	CE1	I	chip enable-1	AF-RF chip enable. Active at "High" To be grounded at 47kΩ
17	AMPNS	O	AM PNS IF signal	IF signal output for AM PNS circuit.
18	LDET	O	lock detector	Active at "Low". To be pulled up to the "VDD" at 47kΩ
19	CREQ	I	current request	Active at "Low". To be grounded at 47kΩ
20	AMINI		AM audio input	The frequency response and the level are set by connecting an external CR network with terminal AMIN as terminal AMDET. r in = 50kΩ
21	COMP	O	composite signal	FM composite signal output. r out < 100Ω
22	VCC		power supply	Analog section power supply pin. DC 8.4V +/- 0.3V
23	LOCH	I	local high	FM local high pin. When seeking local high, apply 5V together with "LOCL".
24	FMLOCL	I	FM local low	FM local low pin. When seeking local low, apply 5V to the base of the NPN transistor with which the specified resistor is being connected to the emitter. Keep it open in case of ordinary marketed models.
25	LOCL	I	local low	FM/AM local low pin. When seeking local low, apply 5V to the base of the NPN transistor. Since this pin is exclusive for AM when the FMLOCL is in use, do not drive it under FM.
26	RFGND		RF ground	Grounding for the antenna section.
27	FMANT	I	FM antenna input	FM antenna input. 75Ω. Surge absorber (DSP-201M-S00B) is necessary.
28	AMANT	I	AM antenna input	AM antenna input. High impedance. Connect to the antenna through an L (LAU type) of 4.7μH. To cope with the power transmission line hums, insert a series circuit consisting of an L (a coil of about 100mH) + R (a resistor of 470 Ω to 2.2kΩ) between the GND.

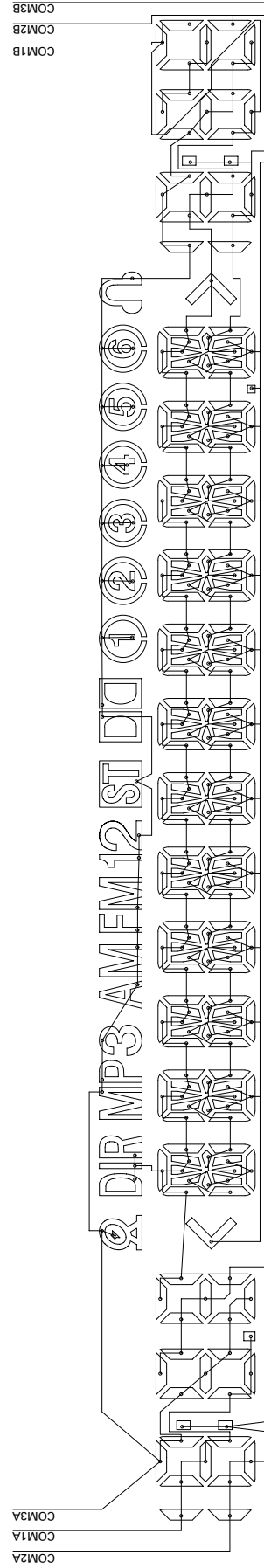
## 7.2.2 DISPLAY

### ● LCD(CAW1822)

SEGMENT



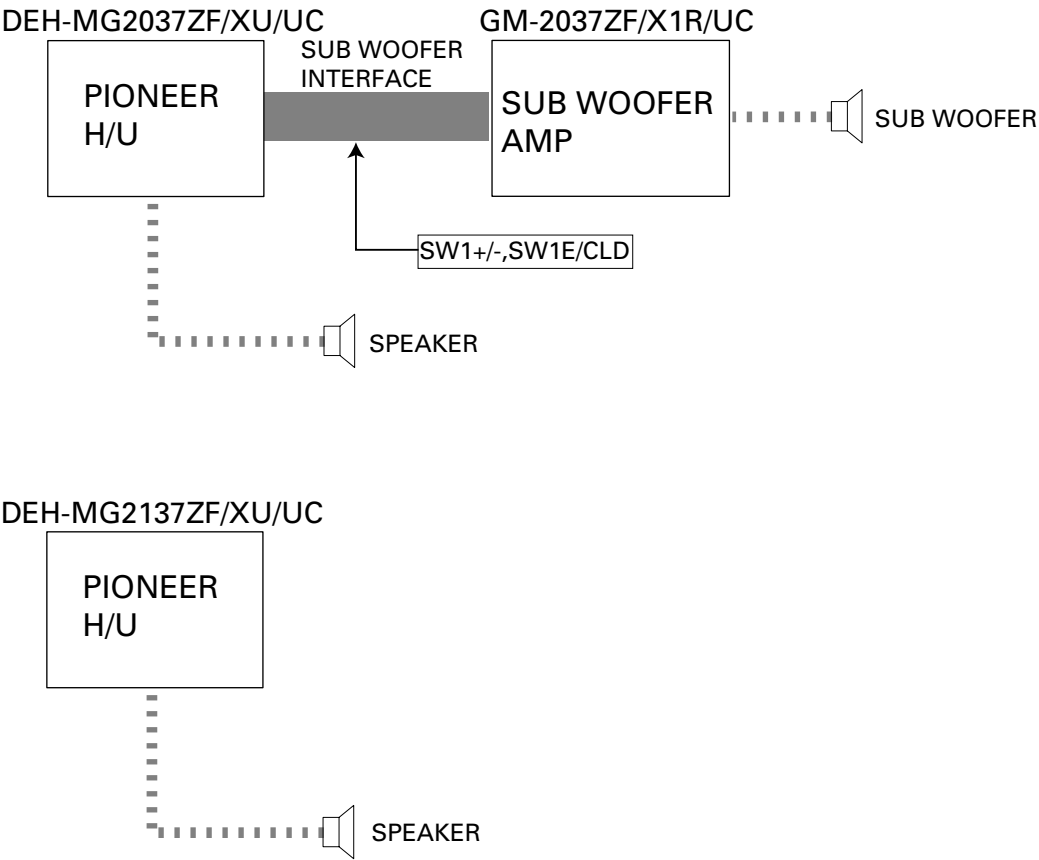
COMMON



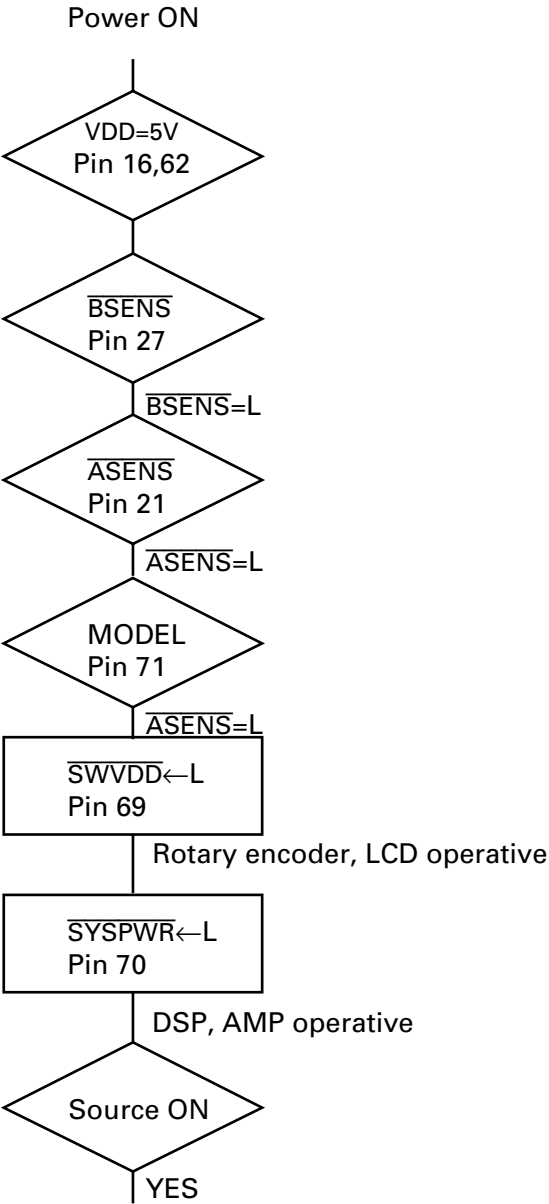
5 6 7 8

**7.3 EXPLANATION**

**7.3.1 SYSTEM BLOCK DIAGRAM**



7.3.2 OPERATIONAL FLOW CHART



Completes power-on operation.  
(After that, proceed to each source operation)



## 7.4 NOTES ON SERVICING

### 7.4.1 CLEANING

Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

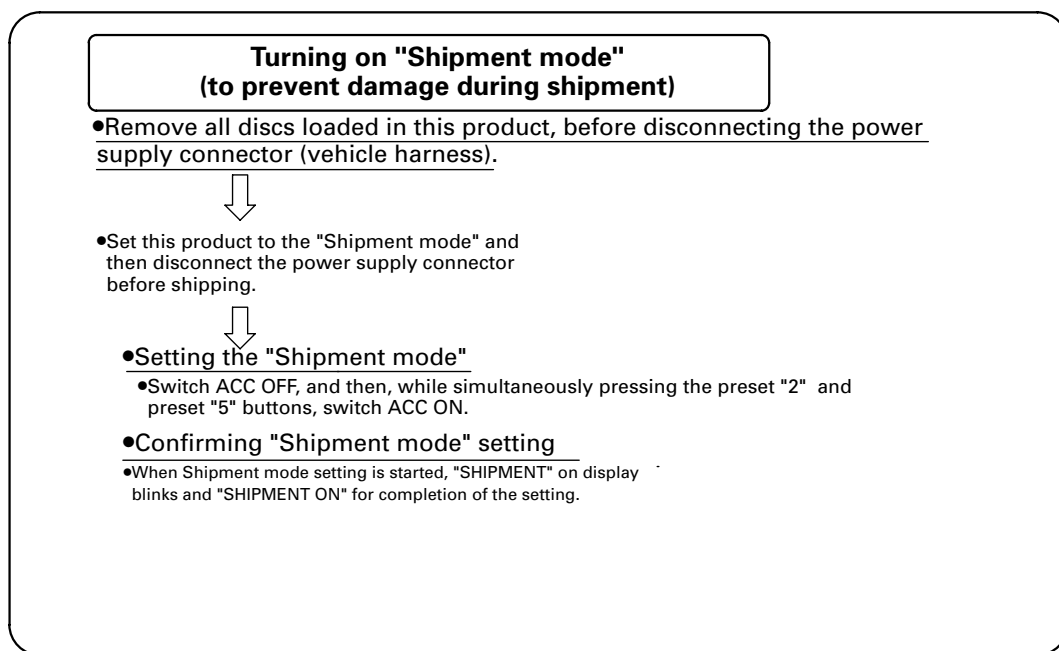
Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

Portions to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008

### 7.4.2 FACTORY SETTINGS

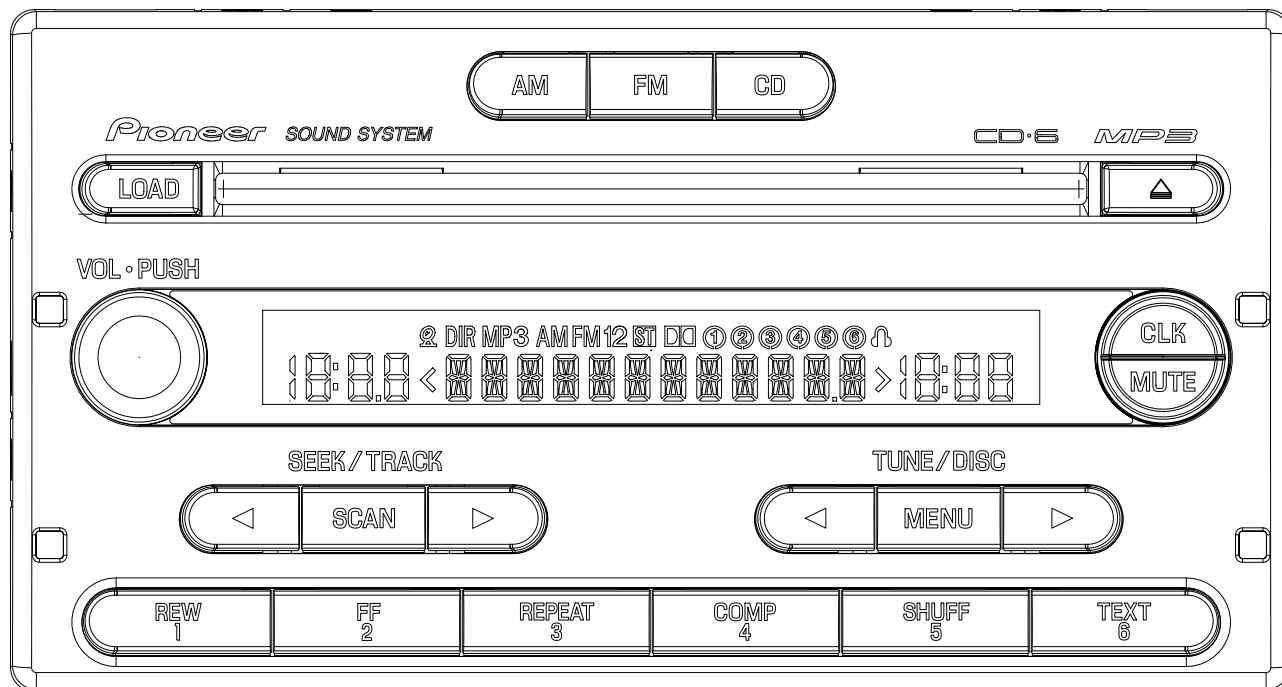
#### ● When the Repair is Complete

When the Repair is Complete, make the CD mechanism ready for transportation.

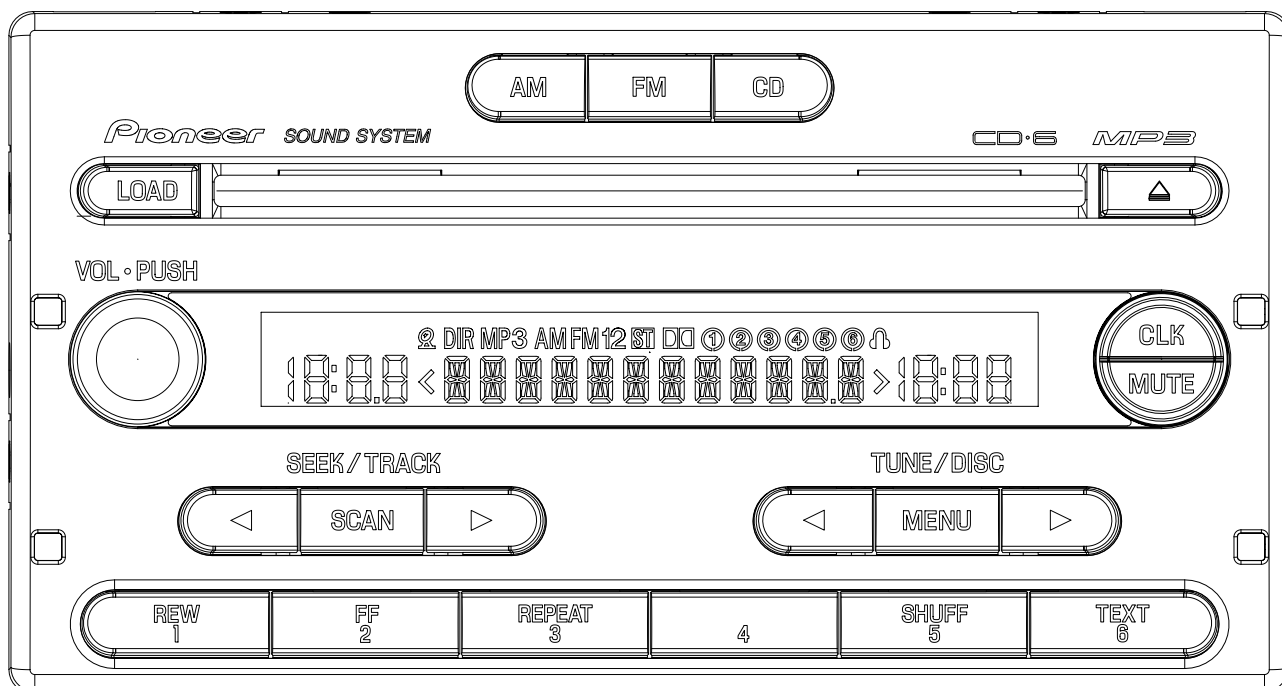


## 8. OPERATIONS

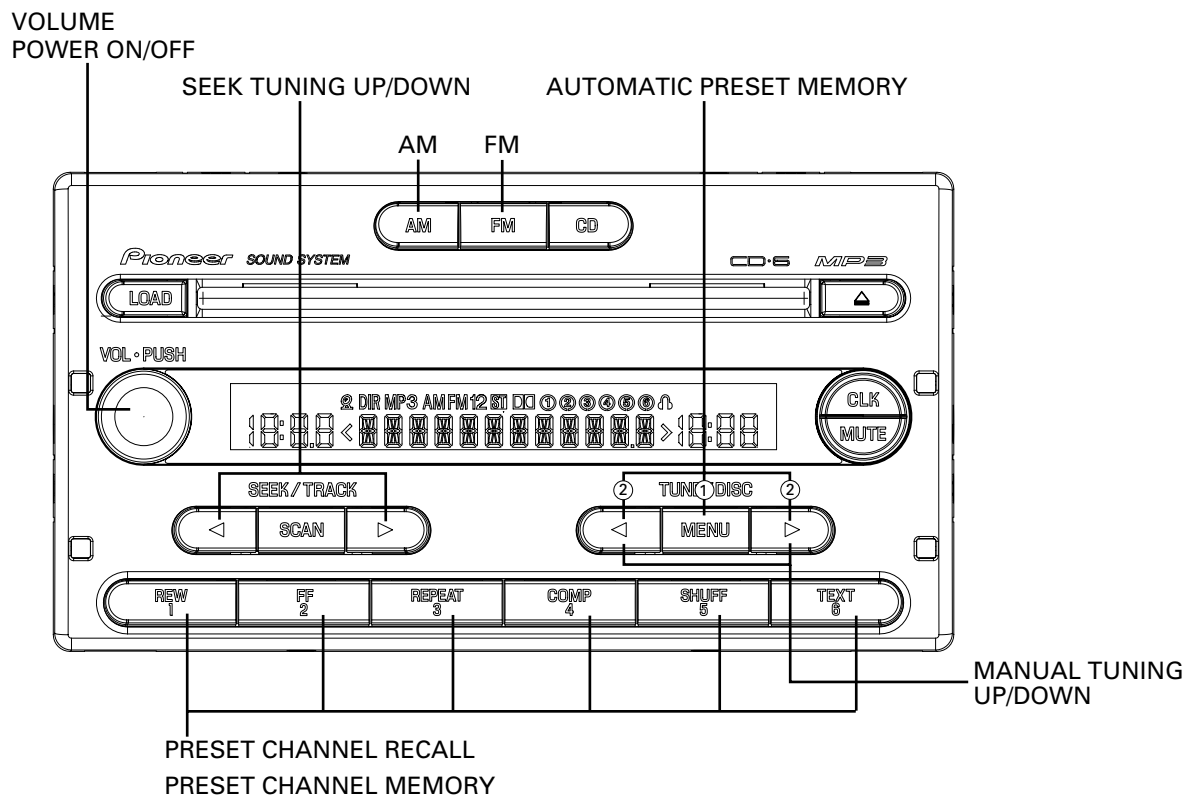
### A ● DEH-MG2037ZF/XU/UC



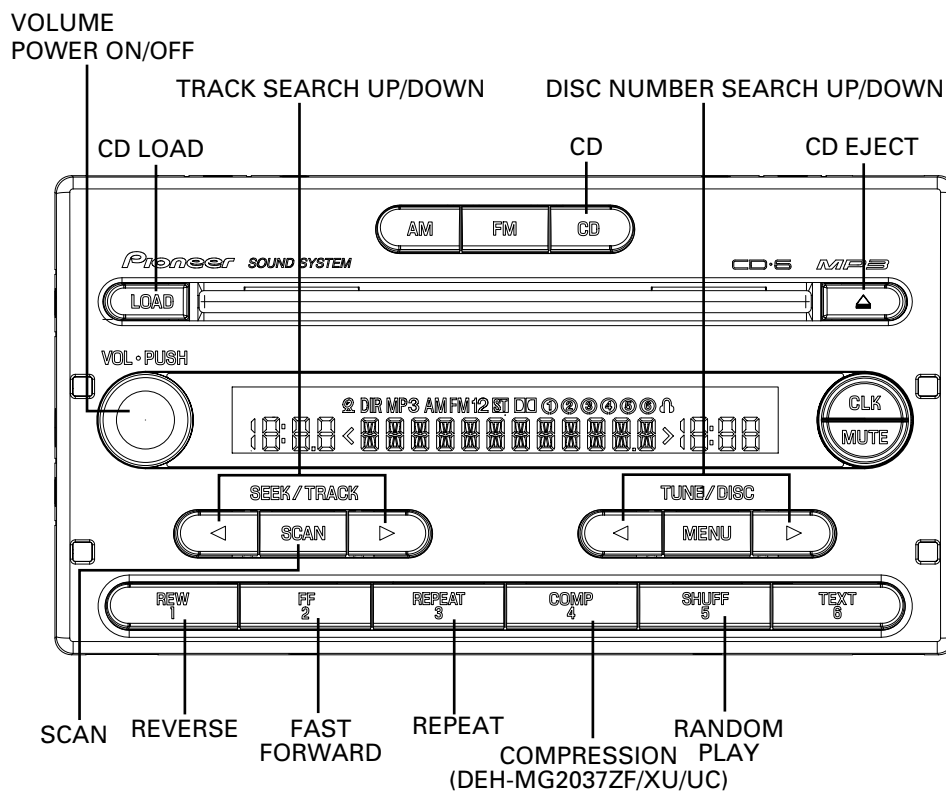
### D ● DEH-MG2137ZF/XU/UC



## ● RADIO



## ● CD

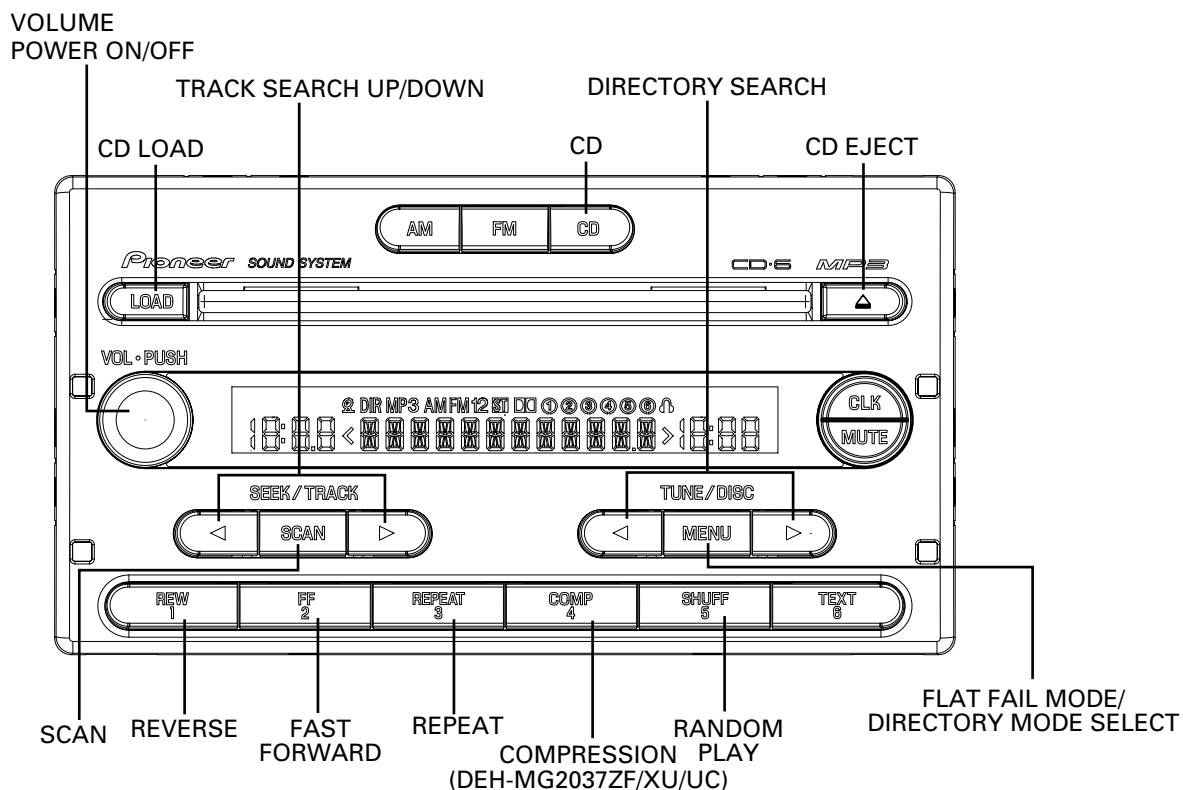


A

## ● MP3

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## ● AUDIO

